

The University of Chicago

SERVICE AREAS OF ELWOOD INDIANA

A PART OF A DISSERTATION SUBMITTED TO
THE FACULTY OF THE DIVISION OF THE
PHYSICAL SCIENCES IN CANDIDACY FOR
THE DEGREE OF DOCTOR OF PHILOSOPHY

DEPARTMENT OF GEOGRAPHY

1935

By
LESLIE MARTZ DAVIS

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Fig. 1.--Location of Elwood. Elwood is located in north-central Indiana, 47 miles northeast of Indianapolis, 161 miles southeast of Chicago, and 137 miles northwest of Cincinnati.

rather than the study of any particular city constitutes the center of interest, and to find a vehicle for the investigation it was thought wise to select a city complying with the following requirements:

1. The city should be small enough to avoid too great a complexity of services, and large enough to furnish a reasonable variety of services.
2. The region dominated by the city should be a balanced area containing a blending of commercial, agricultural, and manufacturing activities. These activities should be numerous enough to furnish some variety of products flowing from the tributary areas to the city, and from the city to the tributary areas.
3. The men in charge of service activities should display a reasonable spirit of co-operation.
4. Transportation facilities leading north, east, south, and west from the city should be adequate and relatively similar.
5. The city should have a surrounding territory generally homogeneous as to agricultural occupancy, as to the quality of the soil, and as to relief, drainage, and other natural features.
6. The city should be located far enough from a large city to be beyond the smothering influence of its service activities.

A study of Elwood with reference to the preceding six points demonstrated that the city meets acceptably the foregoing criteria.

Orientation

During the progress of the investigation it increasingly became evident that an understanding of the service areas of Elwood involved both areal and chronological considerations. The city to a degree is the product of conditions prevailing in the area of which it is a part, and also to a certain extent it is a product of past conditions in the city itself. These areal and chronological considerations constitute the setting of the problem and are introduced here in order to focus attention on the problems involved in this study of Elwood's service areas.

Areal Orientation

In making this survey 52 different activities were studied, and findings from a number of these activity studies are presented in Chapter II. The service areas of the numerous activities of Elwood fall into five composite areas: the Geographic City, the Vicinal Area, the Regional Area, the Divisional Area, and the

International Area. On this basis the activities of Elwood serve five areas, but of these five most of the activities are concerned only with the first three. A sufficient number of activities, however, extend into the more remote areas to justify the recognition of all five.

The Geographic City.--Every activity of the city serves the city in some fashion. The city is, therefore, in itself the first service area, and this area is called the Geographic City (Fig. 2). The Geographic City covers the political city and also includes contiguous built-up or partially built-up districts to the west, south, and east. These small districts are rather closely built up with residences and there is no appreciable break in the city pattern until the outer limits of these districts are reached.

Districts of the Geographic City.--The Geographic City is divided into a number of districts, the division being delimited by a consideration of the functions involved.

(1) The Downtown Business District.--On the north the Downtown Business District extends to North A Street, on the east to a half block east of 16th Street, on the south to South C Street, and on the west to 14th Street. This district, shown in Figure 3, lies almost exactly in the center of the city, and is easily accessible because of the closely spaced urban street pattern.

The activities of the district are varied. Stores selling food, drugs, dry goods, furniture, and hardware are spaced between shops giving barber service, beauty-parlor service, or pool-room entertainment. Public-service companies, auto-sales agencies, restaurants, and other less important retail activities, and a few wholesale activities, extend their influence outward from the Downtown Business District.

(2) The railroad districts.--The railroad districts are centered near the intersection of the two railroads passing through Elwood, but extend along the railroad rights-of-way almost to the limits of the Geographic City (Fig. 3). The Central Railroad District begins on the north at South A Street, extends to the railroad intersection, then swings westward along the Nickel Plate Railroad to Anderson Street, making an acute angle. The two railroad passenger stations and the two railroad freight stations are located in this district.

The outlying railroad districts extend in four arms radiating from the Central Railroad District, reaching almost to the limits of the Geographic City since they go as far as manufactural plants demand switching facilities.

(3) The manufactural districts.--Manufacturing in the

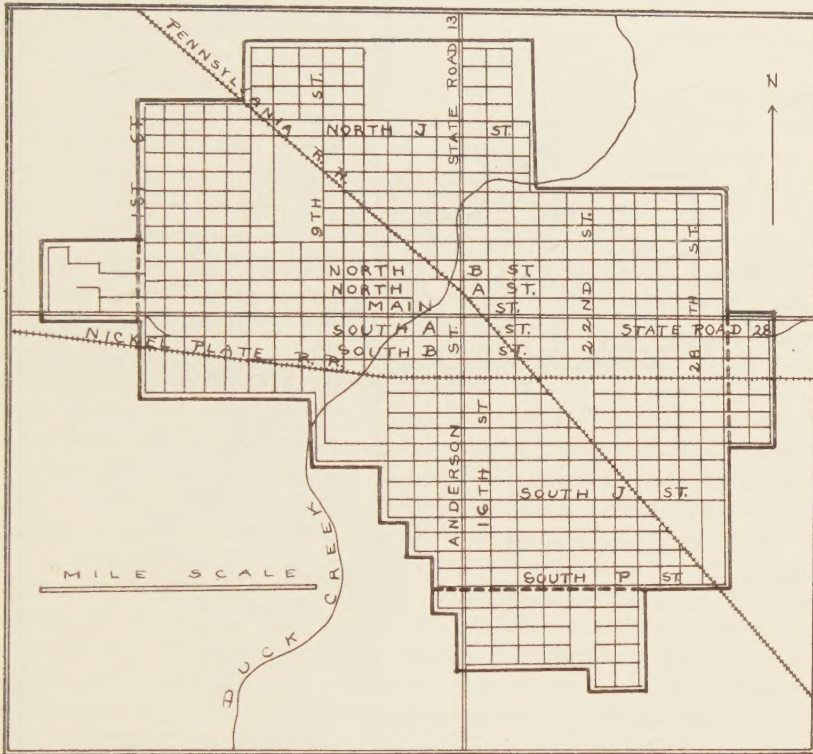
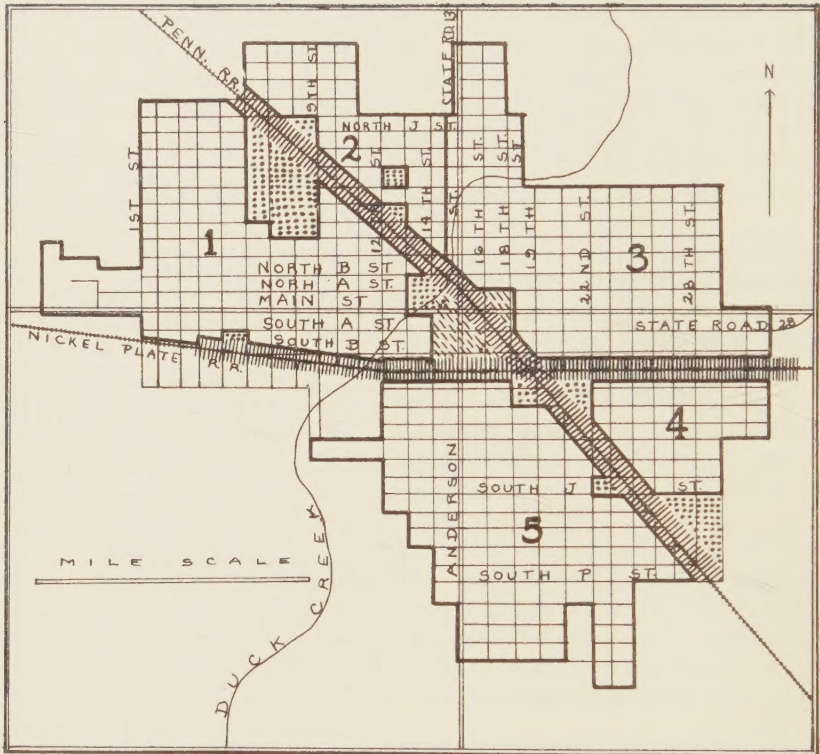


Fig. 2.--Delimitation of the Geographic City. The Geographic City is delimited by the heavy line. Political Elwood begins on the west at 1st Street and continues through to 29th Street, as indicated by the broken lines. South P Street, emphasized by a broken line, is the political boundary on the south. On the north the heavy line marks both the political and geographic boundary.



 Downtown Business District
 Railroad districts
 Manufacturing districts

Residential districts:
 1. Northwestern
 2. North Central
 3. Northeastern
 4. Southeastern
 5. Southern

Fig. 3.--Districts of the Geographic City. This map shows the location of the Downtown Business District, the railroad districts, the manufacturing districts, and the five residential districts of the Geographic City.

Geographic City is carried on in a number of plants. The Central Manufactural District is located in the Downtown Business District (Fig. 3). It has only two factories and these are of minor importance. The first factory produces canvas gloves and buffer cloth for use in tin plate manufacture, and is housed west of the Pennsylvania Railroad passenger station. The second is a cigar-making factory and is established on Main Street a half-block west of the Main Street-Anderson Street intersection.

The Western Manufactural District, paralleling the Nickel Plate Railroad west from the Anderson Street-South C Street intersection, contains the plant of the Stokely Brothers Packing Company. This large canning factory is located north of the Nickel Plate tracks near South A Street and 5th Street.

The Northwestern Manufactural District parallels the right-of-way of the Pennsylvania Railroad between the southeastern portion of the G. I. Sellers and Sons Company plant and the northwestern portion of the grounds of the MacBeth-Evans Glass Company. A spur from this manufactural district runs north from the Pennsylvania Railroad along 11th Street to North J Street, and includes the plants of the Frazier Packing Company and the Elwood Lawn Mower Manufacturing Company. The Pittsburgh Plate Glass Company and the MacBeth-Evans Glass Company have their Elwood units in the Northwestern Manufactural District, both plants being located several blocks from the Central Manufactural District.

The Southwestern Manufactural District extends from the 18th Street and South C Street railroad intersection to the South P Street gate of the local plant of the American Sheet and Tin Plate Company. There are three manufactural plants paralleling the Pennsylvania Railroad tracks in this district: the Associated Box Corporation, the Fettig Packing Company, and the American Sheet and Tin Plate Company.

(4) The residential districts.--The five residential districts of Elwood, shown in Figure 3, differ notably in closeness of house spacing and in house types. Houses are relatively widely spaced in most of the Northwestern Residential District, in the outlying portions of the Northeastern Residential District, and in most portions of the Southeastern Residential District. Compactness of house spacing is true in practically all other portions of the city. House type differences are just as pronounced, since small one-story cottages and small story-and-a-half houses dominate the landscape in portions of the city where houses are rather widely spaced, whereas nearly all of the larger houses are located within a half mile of the Downtown Business District.

The Vicinal Area.--At the beginning of the investigation the writer realized that the rural areas immediately surrounding

Elwood were tied to the city by services, just as other rural areas in the vicinity of other towns and cities are tied to those places. There was, however, no understanding of the size or character of this area. Study revealed the fact that a majority of the city activities reach beyond the Geographic City and extend a few miles into the surrounding territory. Long before all of the services were mapped and studied it became apparent that there is a well-delimited area which is so intimately tied to Elwood as to distinguish it from more distant areas. This area lying in close proximity to Elwood and dominated by the city's activities is called the Vicinal Area.

Limitations of the Vicinal Area.--Nearly all of the retail, professional, personal-service, and religious activities, and a number of the governmental, public-service, and educational activities reach outward to approximately the same distance from Elwood. The territory served extends about 6 miles west, 7 miles east, 12 miles north, and 12 miles southwest of the city. The area included by a line drawn through these points roughly indicates the boundaries of the Vicinal Area (Fig. 4). Since there is a rather clear-cut division within the area, indicating that certain individual service activities terminate east and west about three miles, south about four miles, and north about five to six miles from the city, the Vicinal Area is divided into an inner and an outer section, the former being named the Inner Vicinal Area, and the latter the Outer Vicinal Area.

Pattern of highways and towns.--Two state highways and numerous county highways make up the highway pattern of the Vicinal Area. All of the highways run east-west or north-south, following or paralleling the base or range lines established at six-mile intervals by the government survey of the old Northwest Territory. The highways of the Vicinal Area are at mile or half-mile intervals. In nearly all cases the county highways are gravel surfaced, the exceptions being short stretches of paved roadway near Elwood and Frankton. State Road 28, passing east-west through Elwood, has been paved, and State Road 13, running north-south through Elwood, is paved all but one section of a few miles.

A number of towns are located within the Vicinal Area of Elwood. Leisure is 6 miles north, and Curtisville is 4 miles northwest of the city, between Elwood and Windfall (Fig. 4). Hobbs is 5 miles west, and New Lancaster is 3 miles southwest of Elwood. Omega is 10 miles southwest, and Aroma is 7 miles southwest of Elwood. Frankton is 8 miles southeast, and Orestes is 8 miles east of Elwood.

Activities and products of the Vicinal Area.--Farmers of the Vicinal Area are concerned with the growing of corn, small

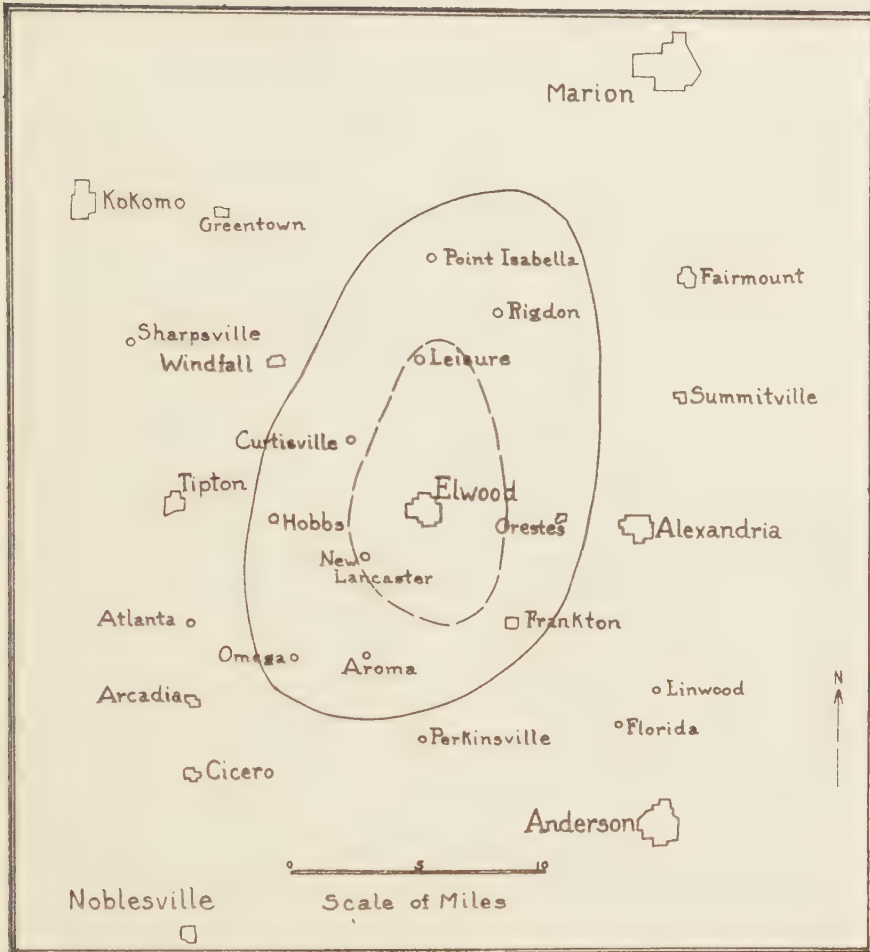


Fig. 4.--The Vicinal Area of Elwood. The solid line, denoting the outer limits of the Vicinal Area, connects points lying roughly half way between Elwood and Kokomo, Marion, Anderson, and Noblesville. The contest for services by retail units of Elwood and the named cities determines largely the location of this boundary. The smaller towns and cities outside the solid line have weaker retail services than Elwood, and Elwood service activities reach more than half way to those places. The broken line indicates the boundary of the Inner Vicinal Area. Within this line Elwood retail service units have a virtual monopoly. The space between the broken and solid lines is the Outer Vicinal Area. Here Elwood units lead in retail activities but do not monopolize them. The drawing of lines was based on statements of customer distribution by Elwood business men.

grain, hay, fruit and vegetables, livestock and poultry, and with dairying practice.¹ The selling of livestock, grain, garden truck, poultry, and dairy products accounts for the main cash sales made by farmers of this area. Units in the towns shown in Figure 4 extend services to the rural sections of the Vicinal Area, but somewhat different services come from different towns, depending upon the types of service establishments in the towns.

The service activities of Elwood pass over the town service areas of the Vicinal Area, and some of them at times succeed in stamping out similar activities originating in the smaller towns. Activities extending from the cordon of towns and small cities surrounding the Vicinal Area in some cases penetrate into the towns and surrounding rural districts of the Outer Vicinal Area (Fig. 4). Intermingled service activities are the rule in the Outer Vicinal Area, but Elwood services are stronger than those of any other town or city.

Physical conditions of the Vicinal Area.--The Vicinal Area of Elwood is a part of the Tipton till plain of north-central Indiana, and is characterized by its relative levelness.² Leverett describes well this area when he writes that "throughout much of the drift-covered portion of Indiana, the surface is monotonously smooth, both on slopes of 10 to 20 feet to the mile and on nearly dead-level surface."³ The Vicinal Area lies in the most featureless part of the plain and Leverett states that "for 20 miles west from the Anderson meridian, in Madison, Hamilton, and Tipton counties, the altitude is remarkably uniform."⁴ Dryer describes this portion of Indiana, which he calls the "Central Drift Plain," by stating that

"the traveler may ride upon the railway train for hours without seeing a greater elevation than a hay stack or a pile of saw dust. The divides are flat and sometimes swampy, the streams muddy and sluggish. The valleys begin on the uplands

¹Types 318A, 319, and 323 in United States Department of Commerce, Bureau of the Census, Types of Farming in the United States, Fifteenth Census of the United States (Washington, D.C.: Government Printing Office, 1933), map in pocket.

²C. A. Malott, The Physiography of Indiana, Handbook of Indiana Geology (Indianapolis: Wm. B. Burford, 1922), chap. 11, p. 105.

³Frank Leverett and Frank B. Taylor, The Pleistocene of Indiana and Michigan (United States Geological Survey; Washington, D.C.: Government Printing Office, 1915), p. 56.

⁴Ibid., p. 107.

as scarcely perceptible grooves in the compact boulder clay, widen much more rapidly than they deepen, and seldom reach down to the rock floor."¹

The Regional Area.--Elwood's Vicinal Area is surrounded by an area of much importance to certain of the city's services. In large measure this area is tied to Elwood by wholesale activities, but it also is under the sphere of influence of automobile sales and service agencies, of retail and wholesale oil and gasoline sales, and of banking and hospital services. In order to distinguish this area from Elwood's other service areas it has been named the Regional Area (Fig. 5). As compared with the Vicinal Area in which the services are carried to the home and the ultimate consumer, the Regional Area is characterized largely by services to the retailer in small towns or along the highways.

Limitations of the Regional Area.--The outer limits of the Regional Area lie roughly 35 miles from Elwood in all directions except at the south and southwest, where the numerous service activities of Indianapolis push back the Elwood Regional Area to within 25 miles of Elwood. The Inner Regional Area, shown in Figure 5, includes the towns and cities receiving the major attention of Elwood wholesale units. The Outer Regional Area, lying beyond the Inner Regional Area, is reached less effectively by the wholesale units of Elwood and receives less attention from Elwood wholesalers.

Pattern of towns and cities, activities, and physical conditions of the Regional Area.--Paved state highways dominate the highway pattern of the Regional Area, connecting all of the cities of the region and practically all of the towns of 2,000 population and over. Anderson, Newcastle, Muncie, Marion, Wabash, Peru, Kokomo, and Frankfort are important state highway focal points in this area, but numerous other cities are located at intersections of state highways. County highways are located at mile or half-mile intervals, in conformity with a government survey imposed on a plain of low relief, as noted in the consideration of the highway pattern of the Vicinal Area.

The activities of the Regional Area are similar to those of the Vicinal Area. Agricultural practice toward the western portion of the Regional Area differs somewhat from agricultural activities of the Vicinal Area, since dairying and truck farming are less important. Retail activities from each of the towns and cities of the Regional Area are similar to those described in

¹Charles R. Dryer (ed.), Studies in Indiana Geography (Terre Haute, Indiana: The Inland Publishing Co., 1897), p. 19.

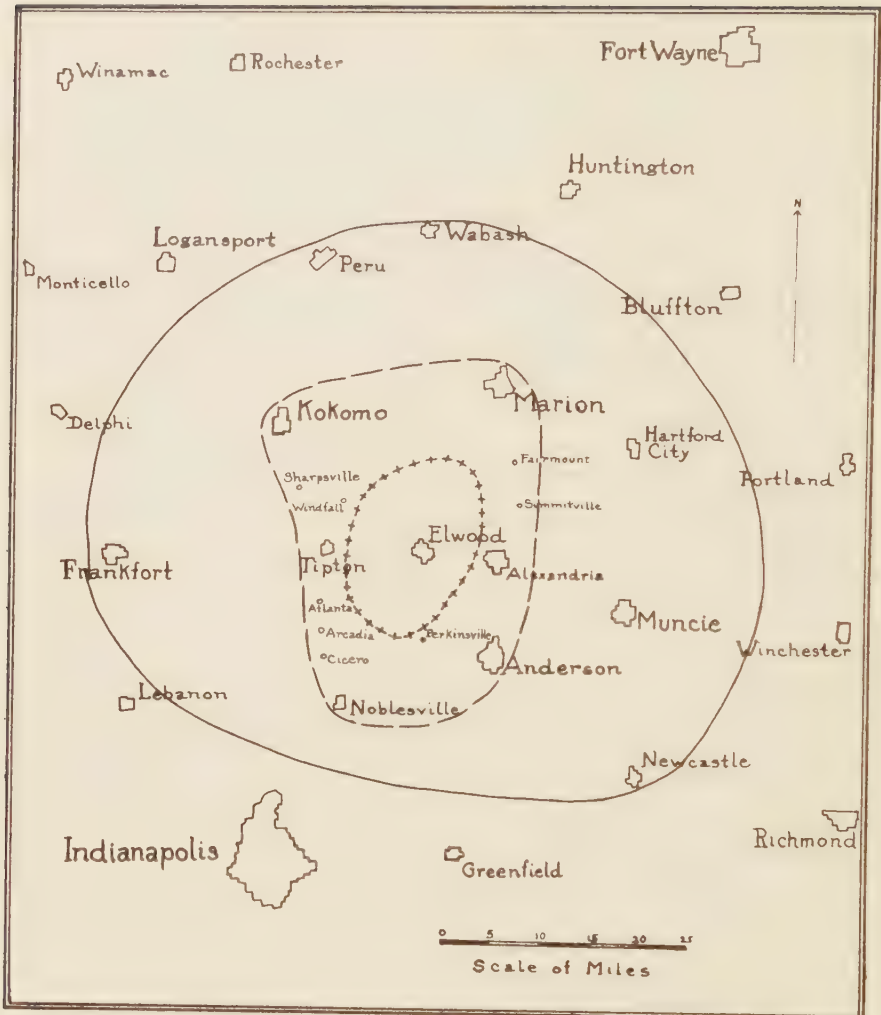


Fig. 5.--The Regional Area of Elwood. The Regional Area of Elwood extends from the crossed broken line, the periphery of the Vicinal Area, to the solid line, a distance approximately 35 miles from Elwood in all directions except at the south and southwest. The spread of grocery wholesale activity in large measure is the basis for delimiting the extent of this area. The Inner Regional Area, extending from the Vicinal Area boundary to the broken line, is the territory most intensively worked by Elwood wholesalers, while the Outer Regional Area, from the broken line to the solid line, receives less attention. Statements and mapping are based on information given by Elwood wholesalers relative to customer distribution and the intensity of service activities.

connection with urban centers of the Vicinal Area, but wholesale activities are much stronger from the larger cities of the Regional Area than from Elwood. Manufacturing activities, likewise, are of greater importance in the larger cities of the Regional Area. Activities of financial, professional, personal-service, governmental, public-service, educational, and religious types are very similar to those of Elwood.

In general, the physical conditions of the Regional Area are similar to those discussed in connection with the Vicinal Area.¹ The horizontally bedded sedimentary formations which underlie the area are deeply buried by glacial deposits. Surface diversification of the drift gives some diversification of slope and drainage, but on the whole slopes are gentle enough for cultivation. In many places the slope does not provide adequate drainage and thus drainage projects were necessary in many places before the land could be farmed. Soils vary in maturity and in fertility, but in general yield good crops under the system of cultivation commonly practiced.

The Divisional Area.--In large measure Elwood's services do not extend beyond the periphery of the Regional Area. The manufactural organizations and certain of the transportation activities have individual service areas that extend far beyond the Regional Area. The United States, therefore, outside the Regional Area, is considered as the Divisional Area of Elwood.

The International Area.--The area outside the United States is called the International Area. One local manufacturing company sells to a limited extent outside the United States, thus carrying Elwood's sphere of influence beyond our national boundaries. The service is small and intermittent, but for the sake of completeness of classification the International Area is recognized.

Chronological Orientation

The present Elwood is not the Elwood of the past. Manufacturing plants once important in its life are present no longer. Other industries have changed their character. These well-marked changes are not uncommon within the area where the Corn Belt and

¹All of the Regional Area lies within the approximately 11,900 square miles attributed to the Tipton till plain by Malott (op. cit., p. 105). Thus a similarity of physical features to those described in the Vicinal Area might be expected.

the Manufacturing Belt overlap.¹ Probably they are more striking in Elwood than in many other places. The business activities of Elwood, other than manufacturing, have had a more even development, for the contacts with the surrounding agricultural areas are those of the representative moderate-size service center of the Middle West. The city, therefore, has experienced conditions making for gradual evolution as well as for rapid change. The whole matter may be clarified by considering the major periods in the development of the city. Since 1870 there have been three clear-cut periods of concern in the economic history of Elwood.

The Pre-Manufacturing Period.--Elwood began as a small farming center, with a population of 310 in 1870 and 751 in 1880. During the years from 1870 to 1886 practically all of the village people depended directly upon agriculture, or the rendering of services to farmers. The inhabitants of the surrounding rural countryside interested themselves largely in activities centering within the community. Since much of the land was in need of drainage, the people were none too successful agriculturally.²

The few small business units in operation in Elwood, besides general stores, were devoted to handling or processing the output of the local fields and forest. Flour mills and grist mills were scattered along the small streams, and blacksmith shops, tanneries, sawmills, and distilleries served the small farming community centering upon Elwood. There was little change in the economic existence from year to year. Farming activities gradually expanded as the swamps were drained, the forests cut, and the building of improved roadways made it easier to haul produce to the primary market. The town grew slowly in population and the townspeople concerned themselves with their double role of buying from and selling to the farmers. During this period the services performed by Elwood units were few in number and highly local in character.

¹Elwood lies within the boundaries of the Corn Belt as delimited by O. E. Baker ("Agricultural Regions of North America, Part IV, The Corn Belt," Economic Geography, Vol. III, No. 4 October, 1927, map on p. 448). Sten de Geer ("The American Manufacturing Belt," Geografiska Annaler, H. IV 1927, item 274) places Elwood within the Manufacturing Belt, as do Charles C. Colby and Alice Foster (Economic Geography for Secondary Schools New York: Ginn & Co., 1931, Fig. 66).

²J. J. Netterville, Centennial History of Madison County, Indiana, 1823-1923 (Anderson, Indiana: Historians Association, 1925), p. 246.

The Period of Maximum Development in Manufacturing.--The drilling in 1886 of the first gas well marked the beginning of a new period in the economic development of central Indiana.¹ Large supplies of cheap gas encouraged manufacturing, and with the coming of industries population increased. Union City, Marion, Muncie, Anderson, Kokomo, and Elwood were places that changed within a few months from small towns to small cities. Within a few years thousands of wells were drilled in this part of the state, and great quantities of natural gas were practically given to manufacturers who located plants in nearby cities.

Manufacturing was well established in Elwood by 1888, and the sleepy little village of the slow growing period of 1870-1886 had been transformed into a small industrial city. The desire to grow rapidly and become a great manufacturing city caused Elwood to overexpand its residential districts and its business district. Most local residents considered the supply of natural gas unlimited, and conservation was disregarded. In order to impress visitors with the newly discovered wealth of the area, wells were permitted to stand open and burn as great flambeaux, day and night, for the entertainment of excursion crowds.

Manufacturers were encouraged to locate their plants in Elwood, where the major attraction was cheap fuel. Acreages of cheap land were available for plant sites, while inexpensive lots could be secured for the purpose of erecting homes for factory workers. Laborers were brought from eastern cities or were encouraged to come in from the surrounding countryside. Manufacturing was advancing into the Middle West during this period, and this section of Indiana was well placed in securing middle western raw materials and in distributing goods by railroad to middle western markets.

Among the first units to locate in Elwood were glass-making plants, brick yards, and metal-working plants.² These types of industry needed large quantities of cheap fuel for use in the manufacture of their products, and there was an active demand for their products. For a few years, factories of different types came to the city in rather rapid succession, and when the tin plate manufacturing plant was built in Elwood, the city was established industrially.

¹Stephen S. Visher, Economic Geography of Indiana (New York: D. Appleton & Co., 1923), pp. 57-58.

²John L. Forkner and Byron H. Dyson, Historical Sketches and Reminiscences of Madison County, Indiana (Anderson, Indiana: published by the authors, 1897), p. 86.

The glass-making companies dominated the industrial activity of the city in the earlier part of this period and had large plants making ordinary window glass, plate glass, lamp chimneys, and bottles. Closely following this group in point of diversified production came the metal-working factories, making radiators, boiler and engine parts, and industrial and ornamental iron work. Millions of common brick were made cheaply through fusing local clays by means of the intense heat afforded in the burning of natural gas. Lumber products from the neighboring forests were cut for local use, and shipments were made to nearby cities within a radius of 50 miles. Wooden boxes and barrels for packing locally-made articles were in great demand, as were planing-mill products used in the interior finishing of the hundreds of homes being built in Elwood and in nearby towns and cities. Furniture was made largely for the same markets, and one local factory made excelsior to be used in the packing of glass products.

The population increased from 751 in 1880 to 2,284 in 1890, and then increased to 12,950 in 1900, although unofficial local estimates were to the effect that there were at least 20,000 people in Elwood in 1898 during the height of the "boom period." During these years Elwood developed much of its present pattern. Business activities became greater in number and better in character. The number of services performed in the city increased rapidly, and the service areas widened accordingly. Better stocked stores attracted farmers from a wider radius during the decade from 1890 to 1900, and rural Saturday shoppers began to appear in greater numbers. More and better surfaced gravel roads helped the movement of widening the service areas of Elwood, but better merchandising by Elwood service units explains largely this change.

The Recent Manufacturing Period.--The exhaustion of natural gas forced the sinking of new wells at an accelerated pace, since the demands for this fuel up to 1905 tended to increase rather than to diminish. The drilling of wells and the spreading of the drilled area had increased gradually the flow of gas between 1886 and 1900, but after that date there was a rapid decline in the amount offered for use.¹

The weakening of gas flow from the wells near Elwood resulted in a number of factories leaving the city. Some of them went to the bituminous coal district in southwestern Indiana where cheap fuel was available. A number of the important plants, however, found it expedient to remain in order to use their plants,

¹George S. Cottman, Centennial History and Handbook of Indiana (Indianapolis: Hyman, 1915), p. 177.

and to take advantage of local labor and financial connections. Continuance of operation in Elwood necessitated the expense of changes in fuel-consuming machinery through the substitution of coal-gas generating apparatus for that using natural gas. One of the main reasons for a number of industries remaining in Elwood after 1905 was the discovery that coal from southwestern Indiana, mixed with a quantity of higher-grade coal from eastern Kentucky or West Virginia, made excellent producer gas that might be used in the gas engine.¹

Of the numerous plants engaged in manufacture in Elwood during the years when natural gas was available, one of the glass-making concerns and the large plant manufacturing tin plate are still in operation. Later additions to the factory roster of Elwood are concerns to which factors other than cheap local fuel were of paramount importance: namely, skilled labor, access to suitable transportation facilities for the shipment of finished products, placement with regard to key markets, and ability to secure raw materials with a minimum amount of delay. These factors explain largely why Elwood has manufactural plants today, after having lost the ephemeral natural gas that attracted factories in the late eighties and early nineties of the last century.²

¹Logan Esarey, A History of Indiana (Indianapolis: W. K. Stewart Co., 1915), p. 912.

²The writer is greatly indebted to Associate Professor Robert S. Platt, of the University of Chicago, for assistance in the development of field work technique, and to Professor Charles C. Colby, of the University of Chicago, for calling attention to the desirability of making an investigation of the areas tributary to some American city, for assistance in delimiting the problem, and for a thoroughgoing criticism of the manuscript.

CHAPTER II

SELECTED EXAMPLES OF SERVICE AREAS

During the progress of the investigation practically all of the service activities of Elwood were studied in detail. Of this large number, nine are presented here. The retail field is represented by retail grocery services and by newspaper distribution, whereas the wholesale field is presented in terms of wholesale grocery, bakery, oil and gasoline services. The financial activities are illustrated by the service activities of Elwood's banks, and the governmental activities by urban and rural postal services. Education is presented in terms of the service area of the senior high school. Finally, manufacturing is illustrated by the service area of the local plant of the Pittsburgh Plate Glass Company.

The Service Areas Of Elwood's Retail Groceries

Elwood's retail groceries are widely scattered over the Geographic City. They are concentrated either on paved streets or within a short distance of paved streets. In fact, only 6 of the 52 groceries of the city are located more than one block from a paved street. The distribution of grocery establishments, moreover, corresponds fairly closely with the distribution of dwelling houses in each of the residential districts of the city (Fig. 6).

Figure 6 shows that the Northeastern Residential District and the Southern Residential District, the two most densely populated portions of the city, have almost identical ratios of groceries to houses, whereas the relatively poorer Northwestern Residential District on the face of figures alone is better served, for there are only 52.6 houses for each grocery. Best served of all is the unattractive North Central Residential District with but 39.8 houses per grocery. The Southeastern Residential District, caught in a back wash between the intersecting railroads and the great yards of the tin plate plant, seemingly is poorest served of all. But before accepting this generalization, based on ratios, the 52 service units must be classified as to the size of inventory and extent of area served.

A check of the groceries with reference to size of inventory and extent of area served revealed great differences in both

the value and variety of the stocks of goods on the shelves, and the size of the area served. The check showed also that there are three types of stores. The small groceries with an inventory of less than \$200 value, based upon wholesale prices prevailing from January to March, 1933, are arbitrarily designated hereafter as Class C groceries. Those units having larger stocks and more complete lines, with inventories running between \$200 and \$600 are referred to hereafter as Class B groceries. A small number of groceries with inventory stocks valued at more than \$600 are listed as Class A groceries.¹

Residential District	Number of Groceries	Number of Houses	Number of Houses for Each Grocery
Northwestern....	10	526	52.6
North Central...	6	239	39.8
Northeastern....	14	974	60.6
Southeastern....	2	182	91.0
Southern.....	14	970	69.3

Fig. 6.--A correlation of the total number of grocery establishments with the total number of houses in each of the residential districts shown in Figure 3.

Service Areas of Class C Groceries.--The majority of the 27 Class C groceries are located near the outskirts of the Geographic City (Fig. 7). As a general rule, these groceries are restricted in sales distribution to a radius of two blocks, but there are exceptions to this delimitation in portions of the city where houses are scattered, or in cases where customers moving a short distance continue their patronage.² All but three of the Class C groceries are of the cottage type; that is, the grocery

¹Three of the leading grocers of Elwood helped determine this classification.

²A survey of 49 of the 52 Elwood groceries was made to obtain the information pertaining to service areas of the three classes of groceries. All of the grocers interviewed contributed facts used in describing grocery services.

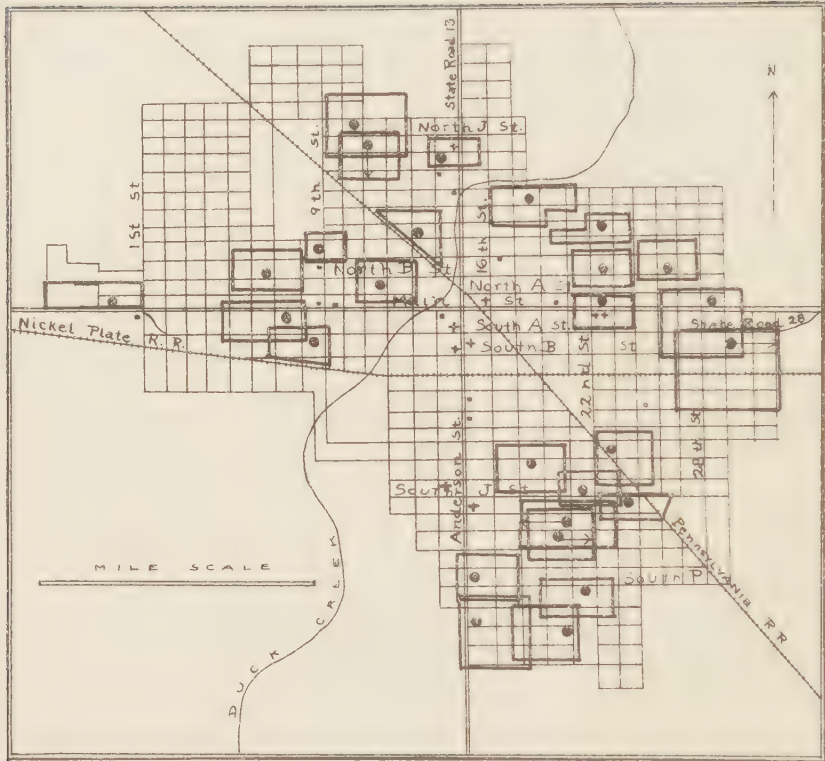


Fig. 7.--Service areas of Class C groceries. The service areas of Class C groceries are small in all cases, seldom extending more than two blocks from the stores. The black dots designate the location of the groceries, and the heavy lines show the extent of the service areas. Class B groceries, designated by the small squares, and Class A groceries, designated by crosses, are shown for orientation purposes. The service areas were drawn according to statements concerning customer distribution given by Elwood Class C grocers.

room is the front room or one of the front rooms of the home of the proprietor.

Service Areas of Class B Groceries.--The 15 groceries of Class B rating are better located for the purpose of developing larger service areas than are the Class C groceries. With two exceptions, they are closer to the arterial streets of the city than the Class C groceries, and depend to a much greater extent upon the automobile drive-in trade of Elwood residents. Figure 8 shows that seven Class B groceries are located east of the Pennsylvania Railroad tracks, and all of the seven are placed in a line paralleling the railroad. This parallelism is in harmony with the layout of the city east of the Pennsylvania Railroad. Near the rail right-of-way, the land is mainly occupied by railroad switches, manufactural plants, and coal storage yards. As a result there is little or no demand for grocery stores near the railroad tracks. Farther east the city pattern shows a close grouping of residences, and grocery needs are apparent. West of the railroad the Class B grocery alignment is not so orderly. In the Northwestern Residential District and in the Southern Residential District, the stores are located along North J Street, north 9th Street, west Main Street, and south Anderson Street.

The greater number of Class B groceries have a major customer radius extending three to five blocks from the stores. The owners of the stores draw trade from the more compactly built-up districts, which contain better houses, and the residents have greater buying power than is found in the areas served by most of the Class C groceries. Ten Class B groceries extend their service activities beyond a five-block radius by furnishing delivery truck services for telephone orders.

None of the Class B groceries has an appreciable trade in the nearby countryside. Rural visitors pass by these groceries in order to buy from the better stocked groceries located in or near the Downtown Business District. A few of the Class B groceries have small numbers of customers in the Vicinal Area adjacent to the Geographic City, but the expense of delivering orders more than two miles from the stores offsets any possible profits that might accrue from the sales.

The Class B groceries located on north 9th Street and North J Street have an appreciable trade with workers of the Pittsburgh Plate Glass Company and the MacBeth-Evans Glass Company, as many of the plant workers find it convenient to drop in for purchases on the way from work.

The Class B groceries located on Main Street, shown in Figure 8, have an important transient trade during the summer months, even though four of them are now off official State Road

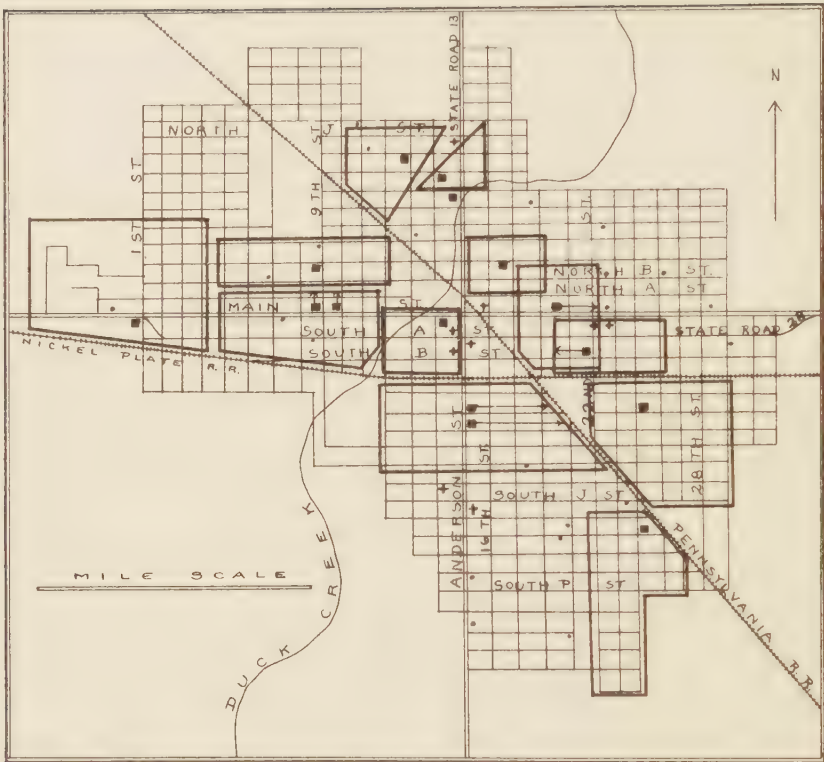


Fig. 8.--Service areas of Class B groceries. The service areas of Class B groceries are larger than those of Class C groceries, extending frequently four or five blocks from the stores. The solid squares designate the location of the stores and the heavy lines show the extent of the service area in each case, excepting one Class B grocery on north Anderson Street which has a city-wide service area. Class C groceries, designated by small dots, and Class A groceries, designated by crosses, are shown for purposes of orientation. The mapping was based on statements concerning customer distribution furnished by the Class B grocers.

28, which has been routed to South A Street. The Class B grocery located at the intersection of 1st Street and Main Street depends largely upon transient sales, and makes a specialty of selling lunches, ice cream, and confections to motorists stopping for gasoline purchases. Its service area, therefore, is not subject to precise delimitation. This store has some trade in West Elwood, and to the east of 1st Street.

The Class B grocery located on north Anderson Street differs markedly in service area from the other stores of this class, in that it has practically no trade in its immediate neighborhood, but depends almost altogether on a city-wide customer distribution reached by means of the delivery truck, with business solicited largely by telephone.

The Class B grocery located in the Downtown Business District has the smallest stock of any of the stores of this class. It draws a portion of its trade from passers-by, and has a small trade from the Vicinal Area immediately west of Elwood, but the location seems poorly chosen, because of its nearness to the strong Class A groceries of the Downtown Business District.

Service Areas of Class A Groceries.--There are ten Class A groceries in Elwood, and five of them are located in the Downtown Business District (Fig. 8). Each Class A grocery has stocks that are relatively complete in both groceries and meats, and the five Class A stores located outside the Downtown Business District provide excellent delivery service. Two of the stores in the Downtown Business District deliver orders to customers living within the city. Each of the ten stores of this group is capably managed, but certain of them have locational advantages as compared with others of the group.

Two of the Class A groceries shown in Figure 8 concentrate sales efforts in the Southern Residential District, to the north of South J Street. Located near each other, they compete strenuously for the trade of the better-class buyers living as far as two to three blocks on either side of south Anderson Street, south of the Nickel Plate Railroad and east to the Pennsylvania Railroad.¹ Both stores have keen competition from the Class B groceries located on south Anderson Street, and from the downtown Class A groceries with service areas covering all portions of the Geographic City.

Somewhat similar conditions are experienced by the Class A groceries located on east Main Street. In addition to the

¹One of the grocers extends his trade over a five-mile radius in the nearby countryside by means of a huckster truck.

competition afforded by the downtown Class A groceries, they must meet the sales efforts of the five Class B groceries selling in the Northeastern Residential District, and the weaker sales efforts of the seven Class C groceries located east of Anderson Street and north of the Nickel Plate Railroad. Each of the Class A groceries on east Main Street has a major service area of only three blocks radius, due to keep competition and number of neighboring groceries of all classes, but the close spacing of residences near the stores fosters a walk-in trade of customers not having telephones. Both stores deliver intensively throughout the Northeastern Residential District, but decidedly less intensively throughout the remainder of the Geographic City.

The Class A grocery located on north Anderson Street and North K Street has more widely scattered merchandising throughout the Geographic City than any of the Class A groceries previously mentioned. The relatively small number of houses in the neighborhood of the store has forced the owner to establish a wide-flung sales distribution. An interesting trade with a portion of the Vicinal Area is carried on because (1) a number of tin plate workers living eight to ten miles north and northwest of Elwood find it convenient to drop in at this store for trading purposes after work, (2) the owner carries a choice selection of groceries and meats, and (3) there is more space for parking cars near this grocery than in the Downtown Business District near the larger Class A groceries.

The five Class A groceries located in the Downtown Business District have more complete stocks than the five Class A groceries located away from the Downtown Business District. Each of the downtown Class A groceries has a stock of goods valued at more than \$900, and the stock is distinguished by offerings in several lines of canned goods, and more complete stocks of meats. Two of the downtown Class A groceries expand their service activities by permitting charge accounts, and a third gives limited credit to customers, allowing them to buy on account if bills are paid semi-monthly.

Two of the downtown Class A groceries offer delivery services to increase service activities in the Geographic City. One of the stores has complete coverage of the Geographic City. Since this grocery is really a department of the R. L. Leeson and Sons Company retail store, which also sells dry goods, clothing, furniture, and hardware, it has the advantage of a carry-over trade of customers buying in other departments of the retail store. The service area of this grocery department extends far beyond the confines of the Geographic City. Numbers of customers are attracted from 5 to 6 miles east or west, and 10 to 12 miles north

or south, to the limits, therefore, of the Vicinal Area. The Saturday trade is notable in even greater customer distribution, since on that day customers come from beyond the solid line of Figure 9.

Two chain grocery stores, of the Class A group, have choice locations on Anderson Street in the Downtown Business District. Neither of these stores delivers orders, but both command important trading groups located within the Geographic City and in the area beyond the city which is reached by the Leeson retail activities mentioned in the preceding paragraph.

Service Area Of The Elwood Newspaper

The Service Area of the Elwood Newspaper.--The Elwood newspaper, published six afternoons each week, serves the Geographic City intensively, since more than 20 carriers are engaged in house service. The newspaper reaches approximately 400 subscribers who live in the rural areas surrounding Elwood to a distance of five to eight miles from the city, and at least 250 more subscribers who live at a greater distance.¹ The service area includes Point Isabella, Rigdon, and Leisure to the north of Elwood, goes almost to Orestes eastward from Elwood, almost to Frankton on the southeast, beyond Aroma on the southwest, and beyond Curtisville on the northwest. This comparatively small area is not covered by the Elwood newspaper to the exclusion of other newspapers, since newspapers coming from Noblesville, Tipton, Kokomo, Marion, and Anderson crowd in on this area from all sides (Fig. 10).

The rural subscribers of the Elwood newspaper are nearly all people who are interested in news of their rural communities and of the Geographic City. They are readers of Elwood store advertising, and make up to a great degree the out-of-town automobile shoppers. The Elwood merchants realize that the easiest way of reaching this trading group is through advertising in the local newspaper, and most of them carry sizable space in the Thursday and Friday issues in order to attract Saturday shoppers.

Elwood Newspaper Competition.--The morning Anderson newspaper has approximately 600 Elwood subscribers, and has ten Elwood carriers working under the direction of a local agent.² This

¹Information concerning customer distribution of the Elwood newspaper was given by the publisher.

²Information concerning the customer distribution of the Anderson newspapers in and near Elwood was given by members of the circulation departments of the two newspapers.

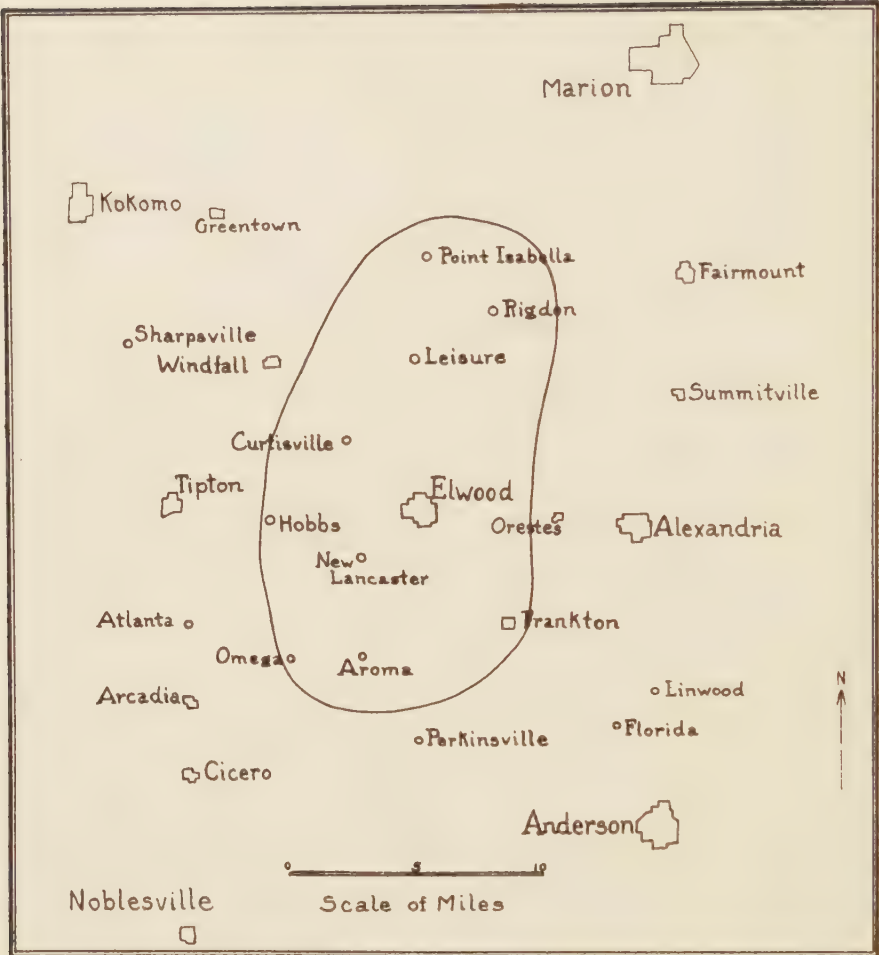


Fig. 9.--Service area of the leading downtown Class A groceries. The service area of the leading downtown Class A groceries, shown bounded by the solid line, coincides so closely with the boundaries of the Vicinal Area that they are considered identical in this study. Competition of better-class groceries located in Kokomo, Marion, Anderson, and Noblesville helps set the trade boundary half way between those cities and Elwood. Added competition to the Elwood groceries is afforded by the other towns and cities shown on the map. Mapping information, based on customer distribution, was secured from Elwood grocers, merchants living in the towns within the solid line of the map, and from Elwood wholesale merchants.



- | | |
|------------------|-------------------|
| ----- Elwood | ----- Marion |
| ----- Anderson | ----- Kokomo |
| ----- Alexandria | ----- Tipton |
| | ----- Noblesville |

Fig. 10.--Service area of the Elwood newspaper and portions of service areas of newspapers of nearby cities competing with the local newspaper in the Elwood service area.

newspaper, published daily excepting Monday, is strong in county and national news, besides carrying Elwood personal items. It carries no advertising of Elwood merchants, however, because Anderson merchants carrying competitive lines would object. More than 500 copies of the newspaper reach into the Elwood Vicinal Area to the south, southwest, and southeast of the city, but only a few copies go north of Elwood. The distribution of this and the other Anderson newspaper in the territory considered tributary by Elwood merchants has weakened the circulation of the Elwood newspaper and the hold of the Elwood business interests in these sections, and many people receiving the Anderson newspaper are being drawn to Anderson for trading purposes.

The evening Anderson newspaper reaching into Elwood and the nearby Vicinal Area also gives subscriber competition to the Elwood newspaper. Practically 500 copies of this newspaper reach Elwood by truck each of the week-day afternoons, and five carriers make house to house distribution. Rural carriers in automobiles reach farm subscribers to the east, southeast, south, and southwest of Elwood in much the manner practiced by the morning Anderson newspaper. Trucks operated from Anderson deliver packages of newspapers to Fairmount and Summitville, as well as to Elwood.

The Tipton newspaper has a following of subscribers beginning immediately west of the Geographic City and increasing in numbers westward toward Tipton (Fig. 10). Kokomo newspapers reach southward between Windfall and Curtisville and weaken Elwood service relations with Windfall. Marion newspapers come in appreciable numbers as far as Leisure. Noblesville has a strong newspaper following around Omega and Aroma. Elwood is slowly being hemmed in by an ever encroaching circle of competitive city advertisers who are decreasing in all directions the areas serviced by Elwood newspaper advertisers.

The Wholesale Grocery Service Area

Elwood has only one wholesale grocery establishment, the R. L. Leeson and Sons Company. This establishment, located in the Downtown Business District, is the most important wholesale unit of Elwood, stressing the sale of canned goods, candy, tobacco, and sugar. It will be remembered that this company also is the leading retail grocery unit of the city. The company, by means of its wholesale grocery division, is a powerful force in projecting the influence of Elwood outward into a relatively large territory. Since the activities of the wholesale division of the company extend to grocers of the numerous towns 6 to 12 miles distant from Elwood, and to many grocers of the towns and cities 15 to 35 miles

distant from Elwood, this wholesale organization aids materially in tying to Elwood the territory called the Vicinal Area and the Regional Area (Fig. 11).

The wholesale grocery business of this organization is conducted in unusual manner both with reference to delivery service and to prices charged retailers. Retailers within the Geographic City receive delivery service for a nominal charge on small orders, or they may come to the loading platform of the wholesale division of the Leeson organization and evade the payment of a delivery charge.¹ Retailers operating outside the Geographic City must come to the local loading platform to secure goods, since it is a policy of the organization to deliver only within Elwood. With reference to prices charged, however, the Leeson wholesale division carries out a policy popular with many retail-store owners, since goods are sold cash to retailers at the price per unit paid by the Leeson wholesale division, freight and brokerage charges being added, and the Leeson wholesale organization takes as profit the amount per unit secured as discount for the cash car-load purchase made by Leeson's from the manufacturer or broker.

The grocery wholesale activities of the R. L. Leeson and Sons Company extend to the solid line of Figure 11. Competition within this service area comes from units located in cities marked in stipple on the map. Two Anderson grocery wholesalers work Elwood and most of the Vicinal Area to a distance of six to eight miles from Elwood. Marion grocery wholesalers come in from the northeast toward Elwood, Kokomo wholesalers from the northwest, and Indianapolis grocery wholesalers compete strongly with the Leeson wholesale organization in the southern and southwestern portions of the service area shown in Figure 11. Grocery wholesalers from Muncie, Ft. Wayne, and Chicago compete with the local wholesaler to a limited extent within the Geographic City.

The Wholesale Bakery Service Area

Elwood has one wholesale bakery, the Elwood unit of the Dietzen Bakery Company. The service area of this local unit, shown in Figure 12, is irregular in shape, having its long axis east-west. The shape and extent of the service area is due to

¹An official of the R. L. Leeson and Sons Company furnished information concerning wholesale customer distribution, and competitive conditions were discussed by numerous Elwood grocers, and grocers of Arcadia, Tipton, Frankton, and Anderson.



Fig. 11.--Service area of the wholesale grocery activities of the R. L. Leeson and Sons Company. Wholesale grocery activities of the Leeson organization are pushed intensively within 15 miles of Elwood, and less intensively to the limits of the service area, shown by the solid line. Service competition within the entire area comes from wholesale units located in the cities shown in stipple, and Chicago. Mapping information on customer distribution and extent of competition was furnished by one of the members of the R. L. Leeson and Sons Company, and by numerous retailers located in Elwood, Arcadia, Tipton, Frankton, and Anderson.



Fig. 12.--Service points reached by the Elwood unit of the Dietzen Bakery Company. Dietzen distribution from Elwood reaches retailers in all of the towns and cities shown within the broken line. Cities bordered in black, located on the Pennsylvania Railroad, have units of the Dietzen Bakery Company. Indianapolis, Muncie, and Marion afford wholesale competition to the Elwood Dietzen unit. Map based on the writer's knowledge of the area within the broken line, and checked at the office of the Elwood Dietzen unit.

the fact that the Elwood bakery is one of a chain, having headquarters at Anderson, and extending through a series of cities along the Pennsylvania Railroad. The unit bakeries, operating in the cities bordered in black in Figure 12, have a series of service areas that touch, each one with its neighbors, along the right-of-way of the Pennsylvania Railroad, but that extend as far to the northeast and southwest, in each case, as delivery trucks are able to operate efficiently.¹

The Geographic City is given almost complete coverage by the Elwood Dietzen unit. Many Class C and Class B groceries carry only Dietzen Bread, and nearly all of the larger independent groceries push its sale. Some Elwood grocers buy bread from bakeries located in nearby cities, but few of them exclude Dietzen Bread from their counters. Two Dietzen delivery trucks serve the local retailers with bakery products.

Service coverage three to five miles from Elwood is less complete, but relatively large quantities of bakery products are sold. A truck operating from Elwood reaches the rural territory to a distance of five miles from the city, providing competition to local hucksters. The small towns to a distance of 10 to 25 miles are served six days a week by Dietzen trucks working out on routes from Elwood to the places designated in Figure 12.

Strong competition is encountered in many sectors of the service area. Certain Indianapolis bakeries send trucks into the towns south and southwest of Elwood, within the broken line, where they have relatively heavy sales. A Muncie bakery has distribution not only in Elwood, but as far west and southwest as Tipton, Atlanta, Arcadia, and Cicero. Certain Marion bakeries reach southwest of Elwood, but this competition is weak.

Wholesale Oil And Gasoline Service Area

The wholesale oil and gasoline business of Elwood is in the hands of six companies--Standard, Sinclair, Cities Service, Shell, Horton, and a local independent oil and gasoline company. Five of the six bulk stations are located in a group along 29th Street between Main Street and the Nickel Plate Railroad, and the other station faces the switch of the Pennsylvania Railroad that serves the Frazier Packing Company plant and the factory of the Elwood Lawn Mower Manufacturing Company. The tanks of all six

¹Information concerning the distribution of customers and competition encountered came from the office of the Elwood Dietzen unit.

stations are located near the railroad tracks in order to have rail-side facilities for pumping oil and gasoline from tank cars to storage tanks. From these tanks oil and gasoline are distributed by truck to retail stations.

All six wholesalers maintain retail service stations in the Geographic City. Together these stations total 21. The six wholesalers almost account for the oil and gasoline sales made in Elwood, since there is only one other wholesaler selling in Elwood, the operator of a bulk station located at Alexandria. This wholesaler serves two retail filling stations in Elwood.¹

The few retail stations located within a distance of three to five miles of Elwood are without exception served by Elwood wholesalers, and three of the local wholesale dealers run trucks into the rural sections near Elwood to supply farmers with fuel oils and gasoline (Fig. 13). The competition of the three Elwood wholesalers is so keen, and they cover the ground so thoroughly, that they are not troubled by having wholesalers from other places work into this small service area. The complete control of this area by the oil companies constitutes further evidence that Elwood has an Inner Vicinal Area which it dominates.

Elwood wholesalers extend their sales beyond this area which they dominate. All six cover an area extending outward on an east-west line to 6 miles from the city and 12 miles from the city on a north-south line. Four of them maintain some service even at a greater distance from the city. Service coverage in this outer area, however, is not nearly so intensive as in the Inner Vicinal Area. Competition coming from bulk units located in several towns and small cities 10 to 25 miles from Elwood becomes keen for Elwood wholesalers selling to retail stations 6 to 12 miles from the city. Companies other than those represented at Elwood have stations at a few points in this area 6 to 12 miles from Elwood, but the heaviest competition is found in sales to farmers living more than 3 to 5 miles from Elwood, and therefore in the Outer Vicinal Area. South of Hobbs, for example, and west of Frankton, trucks from Elwood, Cicero, Arcadia, Tipton, and Anderson, to a total of nine, travel over certain roads in an attempt to sell oil and gasoline.

Sales by the local bulk stations are made to towns and cities shown in Figure 13, but not all six of the stations sell to all of the cities and towns. The two local bulk stations

¹Information concerning customer distribution and competitive conditions in the oil and gasoline trade was furnished by the operators of the six local bulk stations.



Fig. 13.--Service points reached by Elwood wholesale oil and gasoline dealers. The area within the solid line is monopolized in sales by Elwood bulk station dealers. Sales from Elwood are made to buyers in towns and cities within the broken lines. Sales competition within the area between the broken and solid lines comes from wholesale units located in the outlined cities. The broken line between Kokomo and Peru was drawn to tie Peru to the remainder of the service area. Mapping based on information given by the six Elwood bulk station operators concerning customer distribution and competitive conditions.

representing companies having the fewest distributors in central Indiana serve places farther from Elwood than companies such as Standard Oil and Shell Oil. Four of the six bulk station operators truck oil and gasoline to a number of towns and cities shown in Figure 13.

Service Area Of The Elwood Banks

The close grouping of the three Elwood banks, on or near the northeast corner of the intersection of South A Street and Anderson Street was not accidental, since no other street corner in the Downtown Business District offers such advantages of location. The sites occupied by the banks command the principal streets of the city and the major highways entering the city. The banks therefore possess "functional convenience," a matter of great importance to this type of establishment.¹ The larger stores of the Downtown Business District, moreover, are within a few hundred feet of this crossing, and the banks are advantageously placed to serve them. The important customer trade of the Leeson retail store, located on the southeast corner of the street intersection, makes it advisable for the banks to be as near as possible to this important mercantile magnet. The banks in their locations thus also possess "functional magnetism."²

The service area of the banks covers the Geographic City and includes Rigdon on the north, Orestes on the east, Frankton on the southeast, Aroma, Omega, and Atlanta on the southwest, Tipton on the west, and Windfall on the northwest (Fig. 14). Scattered accounts are owned by people living as far as 15 miles from Elwood, since a few people living in the cordon of towns and small cities ringed about Elwood carry on business with Elwood banks in preference to carrying accounts with banks of their own communities.³ Strong banks competing for accounts of this type are located in Marion, Alexandria, Anderson, Noblesville, Tipton, Kokomo,

¹Charles C. Colby, "Centrifugal and Centripetal Forces in Urban Geography," Annals of the Association of American Geographers, XXIII (1933), 12.

²Ibid., p. 14.

³Information concerning Elwood banking was furnished by officials of two of the three local banks. They based their conclusions on the distribution of customer accounts. The writer believes that the business of the third bank would not contradict the generalizations of the two banks from which statements were obtained.

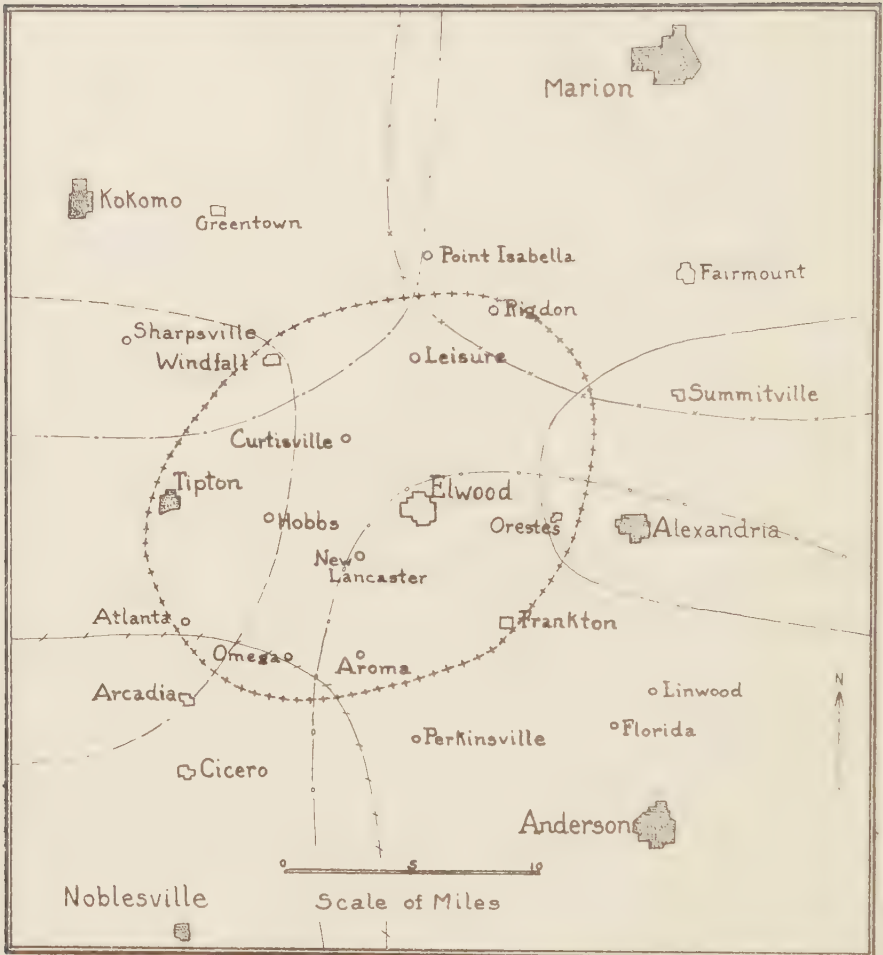


Fig. 14.--Service area of the Elwood banks. The Elwood banks meet strong competition from banks located in cities shown in stipple. The service areas of banks in these cities extend toward Elwood, as shown in the map. The Elwood service area is bounded by the crossed broken line. The Indianapolis service area includes all of the area shown by the map. Since numerous service areas overlap in the Elwood service area, and Elwood itself falls within the service areas of Anderson and Indianapolis, but little of the Elwood service area is not shared with the banks of other cities. Information concerning customer distribution and competitive conditions was furnished by officials of two local banks, and by Elwood business men.

and Indianapolis, and these banks quite definitely block the spread of the Elwood banking influence to a distance greater than 15 miles. This delimitation of banking services, therefore, extends through the Geographic City and the Vicinal Area, and into the Inner Regional Area, as described in Chapter I.

Depositors living 3 to 15 miles from Elwood number about a third of the total number of depositors of the local banks. The accounts of people living in the Geographic City, therefore, make up the bulk of the accounts. Not all people living in Elwood, however, bank with local institutions, since a small number of them are identified with banks located in the cities shown in Figure 14.

There is a certain fluctuation in the amounts of money deposited in the local banks from day to day and season to season. The bulk of the deposit money from outside the Geographic City comes from August to November, following the grain harvests, and the heavy calls for farm credits come just before planting time in spring and autumn. Tomato growers deposit their checks in October. Growers of cattle and hogs make relatively heavy deposits following the main sales seasons of those animals, although the condition of the markets is likely to cause a carry-over of animals for a few months when prices are low. The payment of farm-land taxes forces heavy withdrawals preceding the first week of May and the first week of November. The sales receipts of the stores located in Elwood are heaviest on Saturday of each week, and merchant deposits are larger on that day. Store deposits are heavy during the pre-Christmas period, and following special sales throughout the year. Stores require heavier credit facilities at the time of spring and autumn buying. Payroll requirements must be met every Saturday, but the Saturday deposits of the stores more than counter-balance these withdrawals. Services to Elwood manufacturers are restricted largely to the handling of payroll accounts, and these are built up by the manufacturers so that they may be drawn upon weekly or semi-monthly. The manufacturing units having headquarters elsewhere, including nearly all of the larger plants of Elwood, deal mainly with large-city banks. A number of the smaller plants deal mainly with local banks, and do the remainder of their business dealings with banks in Indianapolis, Chicago, and Cincinnati, which are the cities where the Elwood banks clear.

Service Areas Of Urban And Rural Postal Service

The postal services offered at Elwood provide accommodations to the city people and to the inhabitants of the rural

section extending about Elwood.¹ The city carriers deliver to nearly all portions of the political city, reaching houses on the north side of South P Street, on the east side of 1st Street, on the south side of North N Street, but only to 25th Street south of the Nickel Plate Railroad, rather than to the political city limits in that direction. This service area delimitation on the eastern side of the city is due to the fact that the scattered houses between 25th Street and 28th Street south of the Nickel Plate Railroad make it more practical to serve these people with rural rather than urban deliveries.

Four of the city-carrier routes are in the residential districts exclusively, but two others are divided between the Downtown Business District and portions of the adjacent residential districts. By means of this arrangement the downtown business houses receive an early and a late delivery each week day.

The six rural carriers working from the Elwood office drive cars over routes planned in the horse and buggy days, when more than a 30 mile route meant a long drive, but which may now be covered in three hours. The rural route service area has been determined by postal authorities, and little effort has been made to have the territory covered extend an equal distance from the city in all directions (Fig. 15).

East from the limits of the political city an Elwood carrier drives only two miles before reaching the route of a carrier working out from the Alexandria office. Farther to the southeast he comes to the district apportioned to the Frankton office. A carrier from the Elwood office reaches almost seven miles south, but no local carrier penetrates far to the southwest, because carriers from the Arcadia and Atlanta offices reach into that territory. An Elwood carrier going west covers nearly all of the rural section toward Hobbs, where people turn to Elwood for service needs. North and northeast of Elwood local carriers penetrate to the limits of the sections in which people look to Elwood for most service satisfactions. The only serious discrepancy, therefore, in correlating rural-route coverage with general-service coverage described previously in this chapter, is east and southeast of Elwood, where people receive postal service from

¹Information concerning the routing of urban postmen and the distribution of mails was given by the local postmaster. Postmasters located in Elwood, Arcadia, Atlanta, Tipton, Windfall, and Frankton discussed rural route coverage.

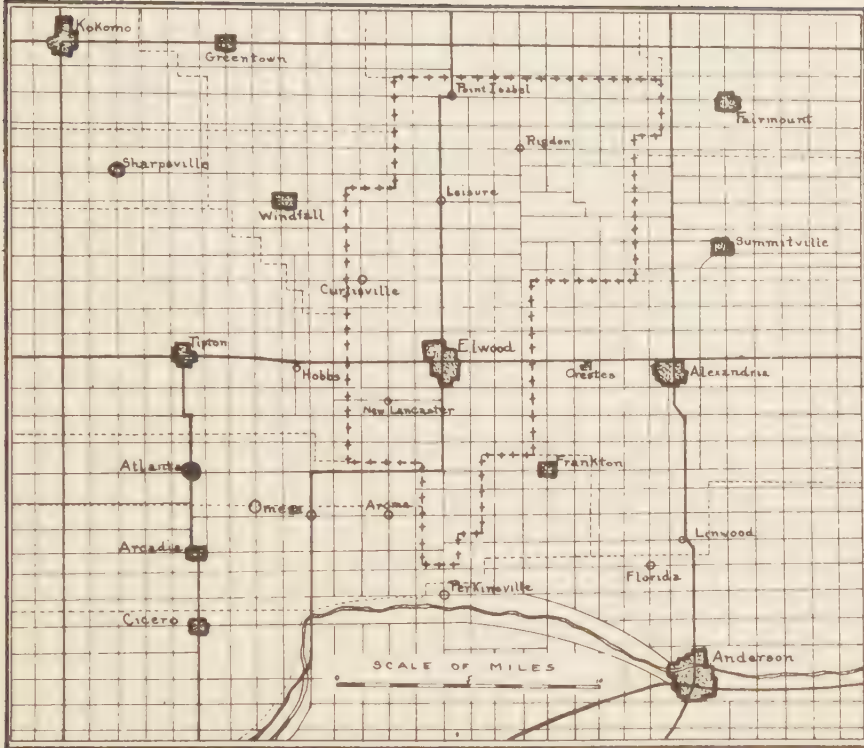


Fig. 15.--Rural service area of the Elwood post office and other nearby post offices in 1933. The boundaries of the Elwood area are shown by the crossed broken line, and the boundaries of the other nearby post offices are shown by the broken lines. The solid lines show highways. Towns and cities having rural postal service areas are outlined. The service areas are delimited by decree from Washington, D.C., and it is not surprising that Elwood's service area in this respect does not correspond closely to its other service areas. Information concerning rural route coverage was obtained from postmasters in Elwood, Arcadia, Atlanta, Tipton, Windfall, and Frankton.

Alexandria, but have practically all other service contacts with Elwood.¹

Service Areas Of The Public Schools

The public-school system of Elwood was developed in its present form at the time of the greatest expansion of manufacturing, during the decade from 1890 to 1900. Buildings and school districts were planned at that time with a view to possible expansion. With the decline in population following 1900, at least two districts witnessed such a gradual exodus of inhabitants as to make ineffectual the complete use of two district buildings. Today Edgewood, Washington, Central, Osborn, and Linwood schools each train children through the first six grades of the elementary school, and each controls a school district of the political city.

The South Elwood School District includes the portion of the Geographic City south of the middle of South P Street, and is a township rather than a city school.² Some children living in this school district attend Elwood public school following the payment of a tuition fee. Children living as far as two miles south of the South Elwood School Building attend that school.

The Junior High School, made up of the 7th and 8th grades, is located in a portion of the Central Building, and has a service area covering the Geographic City. Two or three tuition pupils come from north of the city limits.

The Senior High School, giving instruction from the 9th to 12th grades, is located in the Central Building and draws pupils from all parts of the Geographic City. In addition, nearly 150 pupils come from outside Elwood to attend this city public

¹This causes many delays to people having articles delivered by mail from Elwood, or who have rail deliveries made to an Elwood freight station and receive bills of lading through the Alexandria post office a day later. Medicine mailed from Elwood goes to Alexandria and returns next day to people who may live within sight of the factory stacks of Elwood. The local newspaper is handicapped in distribution southeast of Elwood because it is delivered a day later than newspapers mailed through the Elwood office. In these cases it is evident that the rural mail services are not adjusted satisfactorily. The service areas are in conflict. For a discussion of this matter see Henry C. Taylor, Agricultural Economics (New York: The Macmillan Co., 1923), p.402.

²Statements on the zoning of Elwood school children were given by the city school superintendent.

school (Fig. 16). Although there is a township high school at Frankton, several students living as far as three miles south of Elwood prefer to pay tuition in order to attend the larger and better equipped Elwood school. Several children living in the eastern portion of Tipton County, near Elwood, attend as tuition students. The great majority of the tuition students come from north of Elwood, since there is no senior high school between Elwood, Windfall, and Fairmount (Fig. 16). The Elwood service area does not extend more than four miles northward, however, since both Windfall and Fairmount operate school buses into the country near Leisure in order to secure tuition pupils, but Elwood has never operated a school bus, and so has a short service radius.

Service Area Of The Elwood Plant Of The Pittsburgh Plate Glass Company

The local plant built for the manufacture of plate glass was purchased by the Pittsburgh Plate Glass Company in 1895,¹ and continued operation until the exhaustion of natural gas for high pressure uses in Elwood in 1905. The plant lay idle until 1919, when it was transformed into a place of manufacture for clay tank blocks and clay glass-heating pots by the Pittsburgh Plate Glass Company, which needed a plant manufacturing tank blocks and clay pots for the numerous glass-making plants of that great organization.

The distribution of products of the Elwood plant is not confined to the glass-making units of the Pittsburgh Plate Glass Company, since sales are made to any glass-making plant placing an order with the Elwood plant. Tank blocks and clay pots are distributed to plants located in a long crescent extending from New England to Texas. The majority of the sales are made to plants located in Indiana, Ohio, Pennsylvania, and West Virginia (Fig. 17).²

Sales to buyers located outside the United States are made at intervals. The Elwood plant operates at a tremendous handicap in the International Area because of the necessity of a long rail haul to United States ports, in contrast to the relatively short rail hauls made by competitors in England and Germany. Glass-making plants at Mexico City have purchased from the Elwood plant,

¹Poor's Industrial Volume (New York: Poor's Publishing Co., 1934), p. 1494.

²Information concerning customer distribution was furnished by the local plant manager.

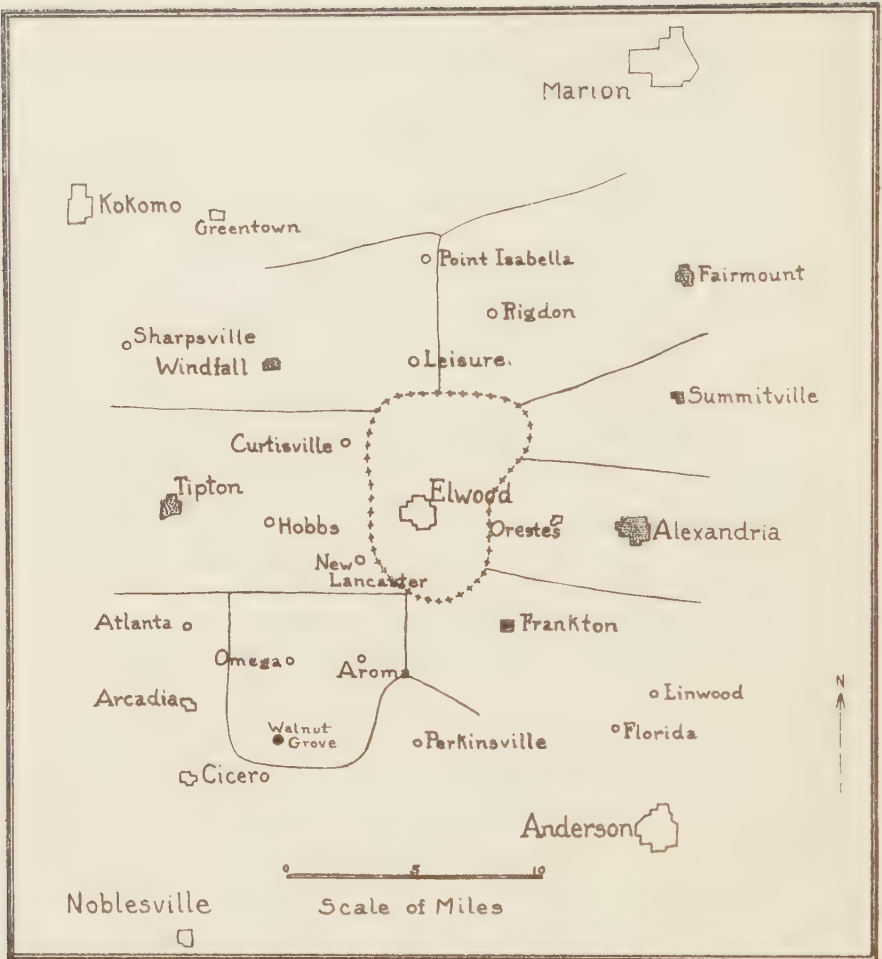


Fig. 16.--Service area of the senior high school. The service area of the senior high school extends to the crossed broken line. Competition is extended from towns and cities shown in stipple, and the solid lines represent boundaries of their service areas toward Elwood. The operation of school buses from Windfall and Fairmount explain the size of their service areas north of Elwood. Elwood does not operate school buses. Mapping information was based on statements of school zoning given by the Elwood superintendent of public schools.



Fig. 17.--Service area in the United States of the Elwood plant of the Pittsburgh Plate Glass Company. The distribution of tank blocks and clay pots made by the Elwood unit of the Pittsburgh Plate Glass Company within the United States is made to glass-making plants within the broken lines. Each dot shows the location of a glass-making plant buying from the Elwood plant. Certain of the dots represent plants of the Pittsburgh Plate Glass Company, but most of them represent plants outside the corporation. The four crosses show the location of competitor plants making tank blocks and clay pots. The scattered service points reached by the Elwood plant outside the United States are unimportant. Mapping was based on statements of customer distribution and competitive conditions made by the local plant manager.

but English and German competition are strong there. Sales to buyers in Japan have been made under similar handicaps.

Nearness to the market is of primary importance in this type of manufacturing, since freight rates form a very important part of the cost to buyers, and nearby plants have a distinct advantage in price quoting to prospective buyers. The central location of the Elwood plant makes it possible to sell tank blocks and clay pots to glass-making plants in Indiana, Ohio, Pennsylvania, and West Virginia without too heavy freight-rate handicaps in the face of competition offered by plants located at St. Louis (Missouri), Muncie (Indiana), Toledo (Ohio), and Steubenville (Ohio).

CHAPTER III

COINCIDENCE OF SERVICE AREAS AND FACTORS IN THE DELIMITATION OF SERVICE AREAS

Coincidence Of Service Areas

A comparison of the individual service areas of Elwood shows marked coincidences in their areal limits.¹ In a number of cases the service areas of all the activities of a group extend roughly equidistant from Elwood: thus indicating that the activities of the group have a common service area as their field of operation.

Coincidence of the Individual Service Areas of the Transportation Group.--Four of the six individual service activities of the transportation group (Fig. 18), namely railroad freight service, railroad passenger service, motor-bus service, and motor trucking service extend more than 35 miles from Elwood and thus reach into the Divisional Area (Fig. 5). The boundary of the area from which people come regularly to Elwood to shop lies about 15 miles from the center of the city and thus the shopping area extends a short distance into the Regional Area. In fact the outer boundary of the shopping area corresponds approximately with the outer boundary of the Inner Regional Area (Fig. 5). Railroad express service, the sixth activity of the transportation group, is so narrowly curtailed by competing offices located in nearby railroad towns and cities that it extends outward from Elwood for less than 10 miles. This places it within the outer boundary of the Vicinal Area (Fig. 4). Four of the six transportation activities, therefore, reach into the Divisional Area, one has a boundary coincident with the outer boundary of the Inner Regional Area, and the other service boundary coincides with the outer boundary of the Vicinal Area.

Coincidence of the Individual Service Areas of the Retail Group.--All of the 16 service activities of the retail group cover

¹It will be remembered that although only a few individual service activities are presented in this paper, virtually all of them received consideration in the dissertation proper, to be found only in the University of Chicago Libraries.

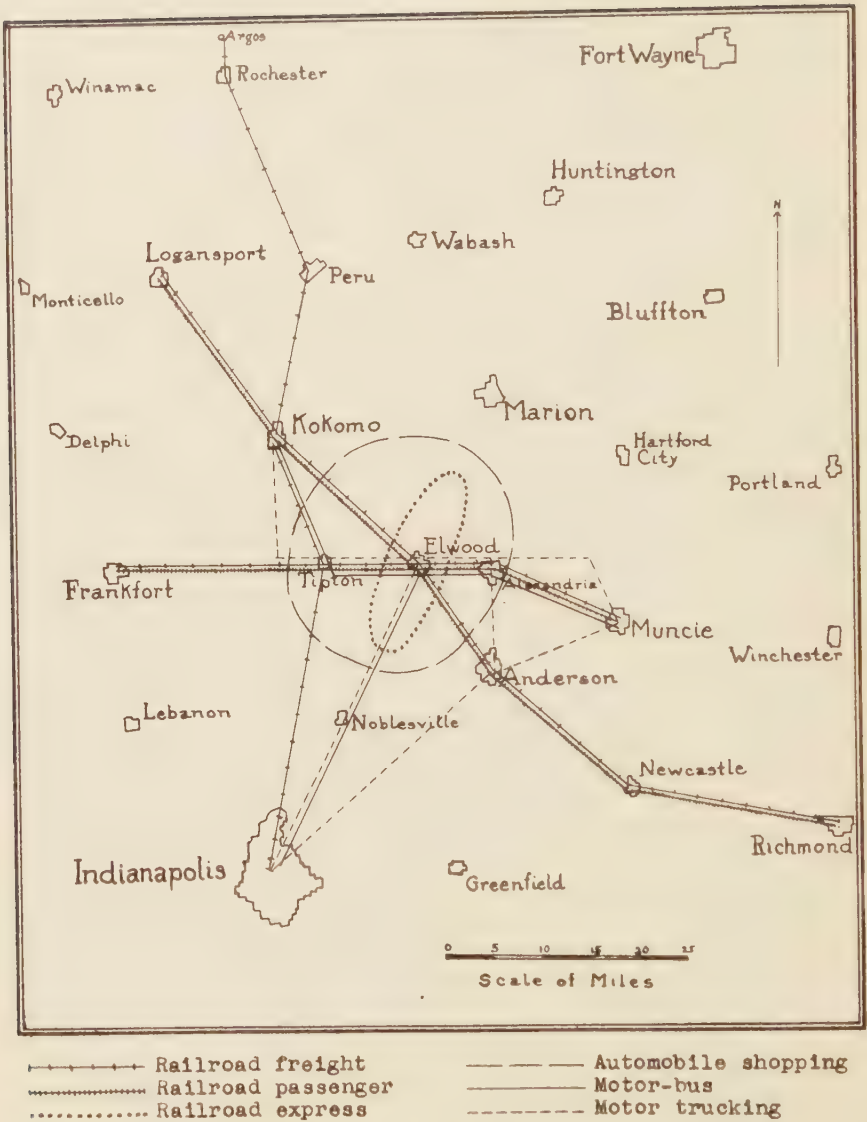
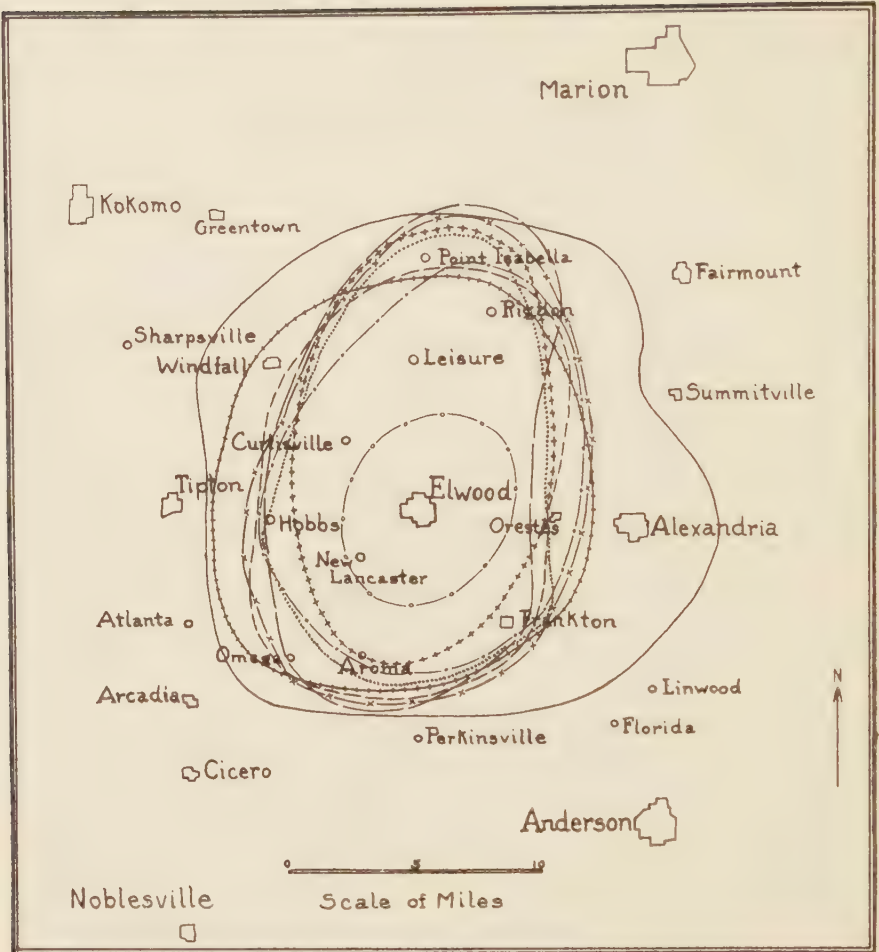


Fig. 18.--Service areas of the six transportation activities of Elwood.

the Geographic City, and two, namely Class B and Class C groceries, do not extend beyond it. Of the nine service areas shown on Figure 19, seven are so strikingly coincident that they make a band on the map. With the exception of the huckster service area, all of these service areas would be enclosed by a circle with a radius of 15 miles and with its center in Elwood. This means that all of them extend approximately to the periphery of the Outer Vicinal Area but no farther. Of the two remaining retail services shown on the map, the huckster service area extends outward to the outer boundary of the Inner Regional Area, whereas the distribution of coal does not extend beyond the Inner Vicinal Area. Of the seven service areas not shown on the map, two, as has been stated, do not extend beyond the Geographic City. One, the service area of the gas and oil stations, corresponds to the huckster area. The remaining four, namely the service areas of the meat market, the hatchery, the drug stores and the elevators coincide fairly closely to the seven banded together in Figure 19. It is this coincidence of 11 of the 16 retail service area boundaries that leads to the recognition of the Vicinal Area as a distinctive general service area of Elwood.

Coincidence of the Individual Service Areas of the Wholesale Group.--All of the ten service activities of the wholesale group serve the Geographic City in a coverage similar to that of the retail activities, but only the wholesale meat business confines its activities to the city. The remaining nine wholesale activities extend their services throughout the Vicinal Area and into the Regional Area; the exception being wholesale fruit and vegetable service, which terminates near the boundary of the Outer Vicinal Area. Four of the wholesale services, namely ice-cream, milk, Coca Cola, and candy and tobacco, have boundaries practically coincident with that of the Inner Regional Area. Of the four remaining wholesale services, the grocery, bakery, floral, and oil and gasoline services extend into the Outer Regional Area. The service areas of ice-cream and Coca Cola, terminating in the Inner Regional Area, are shown in Figure 20, but the service areas of milk, and candy and tobacco, are not mapped. The service areas of wholesale grocery, bakery, and oil and gasoline activities likewise are shown in Figure 20, but the wholesale floral area is not mapped. The high degree of coincidence apparent in the case of retail service areas is not true of the wholesale service areas. However, the fact that eight of the wholesale activities reach into the Regional Area tends to justify the recognition of this general area, and also to identify it especially with the field of wholesale activities.



— Class A grocery	 Hardware and building supply store	++++ Newspaper
----- Clothing store	----- Furniture store	----- Huckster
—x— Variety store	— Coal	----- Automobile sales

Fig. 19.--Service areas of 9 of the 16 individual retail activities of Elwood. The remaining seven are not shown, but in each case the writer was able to ascertain which general service area was reached by the activity in question. Class B and Class C groceries sell within the Geographic City. The service area of the drug stores coincides with that of the Class A groceries. The meat market, the hatchery, and the elevators extend service activities well into the Outer Vicinal Area, whereas the services of the retail oil and gasoline stations extend to the periphery of the Inner Regional Area.



———— Grocery Ice-cream ++++++ Oil and gasoline
 - - - - Bakery - x - - Coca Cola

Fig. 20.--Service areas of five of the ten wholesale activities of Elwood. The other five are not mapped but in each case the writer was able to ascertain the area served. Meat from the Elwood wholesalers is sold only within the Geographic City. Wholesale fruit and vegetables sales terminate in the Outer Vicinal Area. Wholesale milk, and candy and tobacco services extend approximately to the boundary of the Inner Regional Area, while wholesale floral services extend into the Outer Regional Area.

Coincidence of the Individual Service Areas of the Financial, Professional, and Personal-service Group.--All of the nine financial, professional, and personal-service activities of Elwood extend their services to the Geographic City. Three of the nine, namely the laundry, cleaning and pressing, and barber unit activities, extend services approximately to the boundary of the Inner Vicinal Area, and three others, the medical, beauty parlor, and undertaking service units, extend services almost to the boundary of the Outer Vicinal Area. The three remaining services, namely the banking, insurance, and hospital services, extend their service activities throughout the entire Vicinal Area and into the Inner Regional Area. With the exception of the laundry, and cleaning and pressing services, all of the service areas are mapped in Figure 21. Since these nine service activities in the financial, professional, and personal-service group have service area boundaries in three general service sub-areas, it is more difficult to establish coincidence than was true in the consideration of retail and wholesale activities. The individual service areas of this group, however, are largely vicinal, since six of the nine individual service activities have service area boundaries within the Vicinal Area.

Coincidence of the Individual Service Areas of the Governmental, Public-service, Educational, and Religious Group.--All of the 11 activities in the governmental, public-service, educational, and religious service group serve the Geographic City and six of them also serve much or all of the Vicinal Area. The five activities serving only the Geographic City are the municipal government, the urban postal, the city water and gas services, and the elementary and junior high schools. Five of the six which extend their services beyond the Geographic City are mapped in Figure 22. Three of these, namely the senior high school, the church and the library service areas, show some coincidence and help to delimit the Inner Vicinal Area. Of the other two shown on the map, the telephone service falls into the Outer Vicinal territory, whereas the rural postal area has an arbitrary boundary which has little or no bearing on the recognition of the general service areas. The electrical service area, the final service area in this group, was not mapped because information was not forthcoming. In all probability these services cover much of the Inner Vicinal Area.

Coincidence of the Individual Service Areas of the Manufacturing Group.--All ten of the manufacturing service units of Elwood render service to the Geographic City, certain of them serve points in the Vicinal Area, and all of them serve points in the Regional Area. All ten serve points in the Divisional Area and, with one exception, none of them extend their services beyond

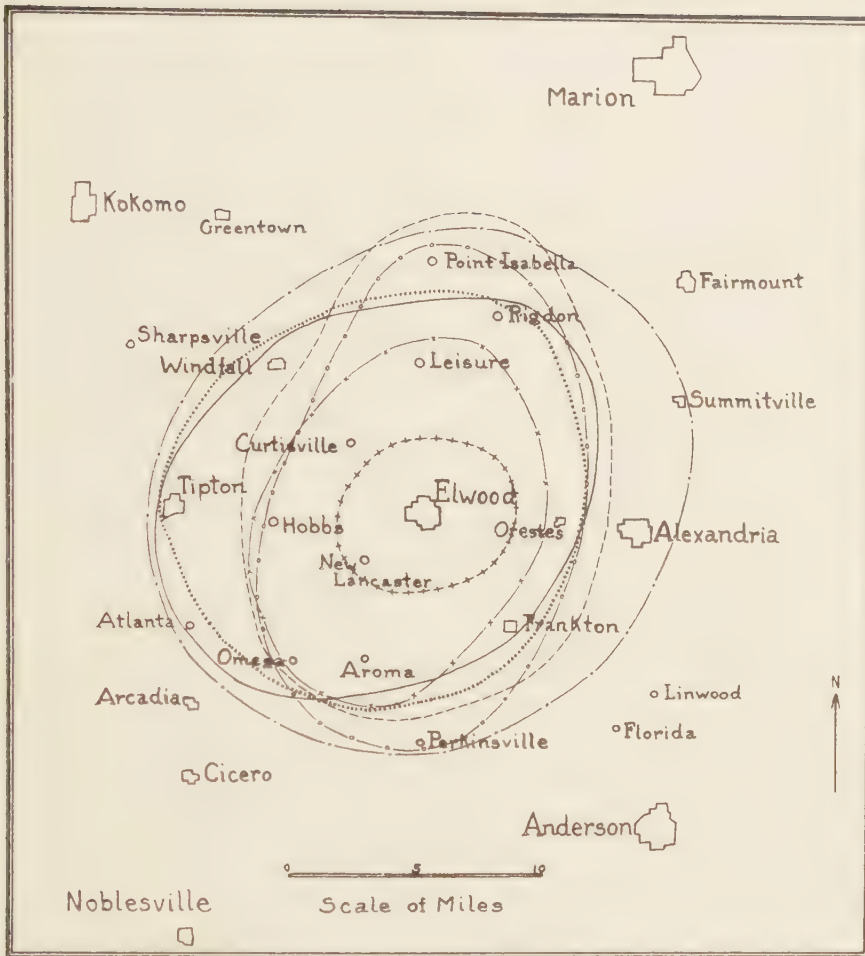
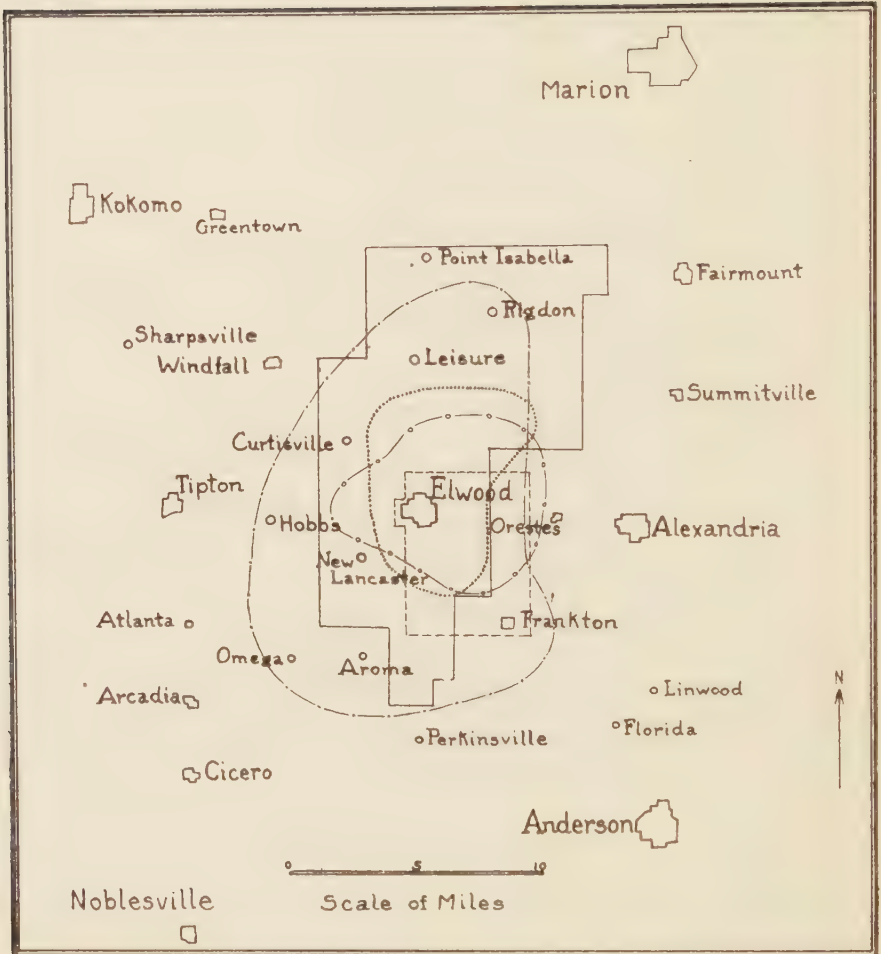


Fig. 21.--Service areas of the financial, professional, and personal-service activities of Elwood. Laundry, and cleaning and pressing service areas are not shown because information was not complete enough for mapping. The writer had enough information, however, to warrant stating that these individual service areas extend approximately to the boundary of the Inner Vicinal Area.

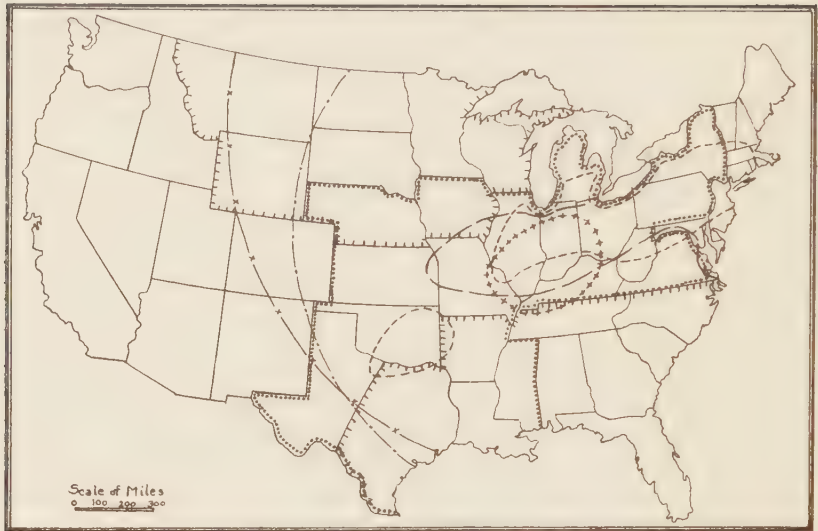


—— Rural postal Senior high school —○— Church
 ---- Telephone - - - - Library

Fig. 22.--Service areas of 5 of the 11 governmental, public-service, educational, and religious activities of Elwood. The boundaries of the municipal government, urban postal, water, gas, and elementary grade and junior high school activities are not mapped because they serve only the Geographic City. The electrical service area was not mapped because information as to this service area was not complete enough to warrant mapping. The writer secured enough information, however, to justify the statement that its service activity extends into the Inner Vicinal Area.

that area, the exception being the local unit of the Pittsburgh Plate Glass Company, which serves a few points in the International Area. All but three of these services are mapped in Figure 23. While there is not a marked coincidence of service points covered by these ten Elwood manufacturing units, there is a coincidence as to the general service area, in which nine of the individual service area boundaries are located, and this coincidence, added to the coincidence of the four transportation services described earlier in this chapter, led to the recognition of the Divisional Area as a distinctive general service area of Elwood.

Summary of the Coincidences of Service Areas.--Figure 24 presents a summary tabulation of the service areas of Elwood's activities. Eight of the service activities of Elwood confine their services to the Geographic City, and of these five come from the governmental, public-service, educational, and religious group, two from the retail group, and one from the wholesale group. Thus services confined to the Geographic City are largely from the governmental, public-service, educational, and religious group. The seven services extending from the Geographic City as far as the boundary of the Inner Vicinal Area likewise are confined to three activity groups. The financial, professional, and personal-service group, and the governmental, public-service, educational, and religious group each include three of these service activities, and the remaining activity is in the retail group. The 19 service activities extending as far as the boundaries of the Outer Vicinal Area are divided among five groups of activities. Eleven of the 19 are retail, while three are in the financial, professional, and personal-service group, and three are in the governmental, public-service, educational, and religious group. Only one of the 19 activities is listed in the transportation group, and one in the wholesale group. The delimitation of the Outer Vicinal Area, therefore, rests largely on evidence drawn from the retail activities. Four wholesale services, three services from the financial, professional, and personal-service group, two retail services, and one from the transportation group make up the ten services terminating in the Inner Regional Area. Although wholesale activities lead in this number, no one group stands out as strikingly as do retail activities in the Outer Vicinal Area. Service activities extending from the Geographic City as far as the boundaries of the Outer Regional Area are four in number and all are listed in the wholesale group. Since wholesale activities account for four of the ten activities in the Inner Regional Area and all of the activities terminating in the Outer Regional Area, it is clear that the recognition of a Regional Service Area rests largely on the wholesale activities of the city. Thirteen services terminate



- ~~~~~ MacBeth-Evans Glass Company
- Pittsburgh Plate Glass Company
- x — G. I. Sellers and Sons Company
- Frazier Packing Company
- Elwood Lawn Mower Manufacturing Company
- Monticello Manufacturing Corporation
- + + + + + American Sheet and Tin Plate Company

Fig. 23.--Service areas of seven of the ten manufacturing activities of Elwood. While not enough material was secured to warrant mapping the service areas of the Associated Box Corporation, the Fettig Packing Company, and the Stokely Brothers Packing Company, the writer is convinced that all three of these individual service activities have service boundaries in the Divisional Area.

their activities in the Divisional Area. Nine of these are from the manufactural group, and the remaining four are from the transportation group. The four services from the transportation group, and the Associated Box Corporation, from the manufactural group, have service area boundaries a comparatively short distance within the Divisional Area, but the remaining manufactural services reach out a relatively great distance from Elwood, and certain of them practically have national distribution. One service activity extends beyond the borders of the United States, and thus reaches into the International Area.

Factors in the Delimitation of Service Areas

A number of factors entered into the delimitation of the individual service areas of Elwood. As might be expected, some factors were encountered many more times than others. In some cases four or five of the factors played a part in the recognition of the boundary of a single service area. The following list summarizes the factors:

1. The locational factor--the location of a service unit within the city's pattern has a bearing on the number of people served and thus on the extent of the service area.

2. The convenience factor--convenience to Elwood both from the standpoint of distance and of suitable transportation facilities profoundly affects the distribution of services.

3. The quality factor--a reputation for high quality of service assists materially in widening the service field. Conversely, a reputation for poor service tends to narrow the service field.

4. The competitive factor--the competition of service units located in other service centers has a marked influence in limiting the extension of Elwood's services.

5. The co-operative factor--co-operation or the absence of co-operation among competitive or non-competitive service units has a bearing on the service areas of those units.

6. The governmental factor--in the distribution of governmental services a governmental decree in most cases definitely limits a service field.

7. The climatic factor--a few Elwood services have service areas delimited in part by climatic conditions.

8. The momentum factor--the momentum of an early start is important in the cases of a few Elwood service units.

9. The arbitrary delimitation factor--the arbitrary delimitation of service areas by national commercial and manufactural organizations has a bearing on the distribution of certain

Services	No. of Estab- lish- ments	Geog. City	Inner Vici- nal	Outer Vici- nal	Inner Re- gional	Outer Re- gional	Divi- sion- al	Inter- na- tional
Group I								
Transportation								
Rail. freight	2	*	*	*	*	*	*	
Rail. pas- senger.....	2	*	*	*	*	*	*	
Rail. express	1	*	*	*				
Motor bus....	2	*	*	*	*	*	*	
Motor truck..	2	*	*	*	*	*	*	
Automobile shopping....	...	*	*	*	*			
Group II								
Retail								
Grocery								
Class C.....	27	*						
Class B.....	15	*						
Class A.....	10	*	*	*				
Meat.....	1	*	*	*				
Clothing								
Women's.....	7	*	*	*				
Men's.....	6	*	*	*				
Variety.....	2	*	*	*				
Furniture....	5	*	*	*				
Hardware and Building								
Supplies....	4	*	*	*				
Coal.....	6	*	*					
Newspaper....	1	*	*	*				
Huckster.....	7	*	*	*	*			
Hatchery.....	1	*	*	*				
Automobile...	6	*	*	*				
Oil and gas..	36	*	*	*	*			
Drugs.....	7	*	*	*				
Elevator.....	2	*	*	*				
Group III								
Wholesale								
Grocery.....	1	*	*	*	*	*		
Bakery.....	1	*	*	*	*	*		
Meat.....	2	*						
Fruit and vegetables..	2	*	*	*				
Ice-cream....	1	*	*	*	*			
Milk.....	3	*	*	*	*			
Coca Cola....	1	*	*	*	*			
Candy and tobacco.....	1	*	*	*	*			
Floral.....	3	*	*	*	*	*		
Oil and gas..	6	*	*	*	*	*		

Fig. 24.--Summary tabulation of Elwood service activities by number of establishments and areas served. The asterisks indicate the area or areas served.

Services	No. of Estab- lish- ments	Geog. City	Inner Vici- nal	Outer Vici- nal	Inner Re- gional	Outer Re- gional	Divi- sion- al	Inter- na- tional
Group IV Financial, Professional, and Personal- service								
Banking.....	3	*	*	*	*			
Insurance.....	12	*	*	*	*			
Medical.....	14	*	*	*	*			
Hospital.....	1	*	*	*	*			
Laundry.....	1	*	*					
Cleaning and Pressing....	8	*	*					
Barber.....	7	*	*					
Beauty parlor	7	*	*	*				
Undertaking..	3	*	*	*				
Group V Governmental, Public-service, Educational, and Religious								
Munic. govt..	1	*						
Postal								
Urban.....	1	*						
Rural.....	1	*	*	*				
Water.....	1	*						
Gas.....	1	*						
Electricity..	1	*	*					
Telephone....	1	*	*	*				
School								
8 grades....	8	*						
9-12 grades..	1	*	*					
Library.....	1	*	*	*				
Church.....	18	*	*					
Group VI Manufactural								
Glass-making.	2	*	*	*	*	*	*	*
Wood-working.	2	*	*	*	*	*	*	
Vegetable- packing.....	3	*	*	*	*	*	*	
Metal-working	3	*	*	*	*	*	*	
Summary by groups								
Transportation	9	...	...	1	1	...	4	...
Retail.....	143	2	1	11	2	...	...	...
Wholesale.....	21	1	...	1	4	4	...	...
Financial, etc.	56	...	3	3	3	...	...	...
Government, etc.	35	5	3	3	...	...	...	...
Manufactural..	10	...	...	...	...	...	9	1
Total.....	274	8	7	19	10	4	13	1

Fig. 24--Continued

of Elwood's services.

10. The entrepreneurial ability factor--the degree of entrepreneurial ability possessed by those in charge of a service operation has a marked influence on the extension of certain of Elwood's services.

